TEXT FLY WITHIN
THE BOOK ONLY

UNIVERSAL
LIBRARY

OU_162549

UNIVERSAL
LIBRARY

THE ECONOMICS
OF
PRIMITIVE PEOPLES

THE ECONOMICS
OF
PRIMITIVE PEOPLES

by

STEPHAN VILJOEN, Ph.D.
*Lecturer in Economics, University of
Pretoria*

NEW YORK TORONTO
STAPLES PRESS LIMITED
P. S. King and Staples Limited
CAVENDISH PLACE, LONDON, W1
1936

CONTENTS

CHAPTER PAGE

I. FORMATIVE FACTORS 11

II. THE DEMOGRAPHIC ASPECT 54

III. TECHNIQUE 83

IV. THE FOOD QUEST 96

V. AGRICULTURE 110

VI. THE DOMESTICATION OF ANIMALS . . . 125

VII. ARTS AND CRAFTS 139

VIII. TRANSPORT 168

IX. THE DIVISION OF LABOUR 182

X. SLAVERY 196

XI. TRADE 210

XII. MONEY 226

XIII. DISTRIBUTION AND CONTROL 240

BIBLIOGRAPHY 265

INDEX 269

ILLUSTRATIONS

Egyptian Hoe and Plough . . . . . *page* 115

Egyptian Ploughing and Sowing Scene . . *page* 115

Mesopotamian Sowing-plough . . . . *page* 115

The Indian Horse-travois . . . *facing page* 170

The Weighing of Rings . . . . *facing page* 234

THE ECONOMICS OF PRIMITIVE PEOPLE

CHAPTER I

FORMATIVE FACTORS

The culture of a people comprises all its activities and possessions. Its economic culture consists more specifically of the methods applied in earning a livelihood. Cultures differ from one another in the number and in the state of development of their component elements or traits. Primitiveness, from an economic point of view, means a low development of technique, and therefore a slight control over the forces of nature. This implies a greater immediateness in the ways of living. As technical and social factors are closely related, it implies also undeveloped forms of organization and control.

Primitiveness is naturally a relative term. Between the various forms of primitive economy, and especially between the purely acquisitive methods of gaining a livelihood by hunting and collecting and the cultural control involved in agriculture or in pastoral pursuits, there are in many ways qualitative as well as merely quantitative differences. Even between peoples utilizing formally the same methods of earning a livelihood wide cultural differences often exist. Thus higher hunters can be distinguished from lower hunters. There are also several fairly well-marked forms, or stages, in the development of agriculture and of pastoralism. If, nevertheless, all these peoples are grouped together, it is because the cultural similarities which unite them are economically more significant than the differences which distinguish them from the so-called "civilized" societies.

Differences in economic development have been interpreted either as the inevitable results of environmental or biological factors, or merely as the accidental effects of differences of opportunity.

The physical environment consists of a complex of forces, such as soil, relief, raw materials, position, and climate. These may affect a people's culture either directly by their influence on human physique, or indirectly by presenting opportunities for or obstacles to economic development.

Environmental, and especially climatic, factors have a direct influence on human physique, they create certain conditions in the human organism, and they afford facilities for the bearers of disease. Anaemia in polar regions is an example of the first, the prevalence of colds in temperate regions of the second, and tropical diseases of the last. These last are especially important. Germs, insects, or worms causing disease are dependent on conditions of temperature, humidity, and wind. They are most prevalent where the climatic conditions are best suited for their existence. Polar and desert regions are largely free from them, whereas the tropics are full of the most deadly types. Malaria, yaws, and numerous other diseases greatly reduce the vitality of people living in the tropics. As the partial immunity of adults is generally acquired by repeated attacks from infancy, the effects are seldom completely eradicated. Children attacked by malaria "grow weak and sallow, their spleens are permanently enlarged, and their vitality is lowered for life."[1] The concentration of large numbers of people in towns in the tropics is, under primitive conditions, accompanied by grave dangers. The poor quality and the lack of variety of the food in these regions also lower the powers of resistance to disease. The effects of such conditions on social development are obvious.[2]

Much has also been made of the influence of climate on the process of selection, especially in the works of

---

[1] Huntington, *The Pulse of Progress*, p.147.

[2] Cf. Borchardt, *Einfluss des Klimas auf den Menschen, Handbuch der Klimatologie I.E.*

Ellsworth Huntington. Climatic factors, it is maintained, determine to a large extent the types of temperament and physique that are liable to extermination and those that will survive and reproduce themselves. The difference between the hustle of the North and the lethargy of the tropics is explained, therefore, even more than by the direct influence of climate, by the different kinds of temperament which have been able to survive in the two regions respectively. For the energy and foresight required to provide for a cold winter are powerful factors eliminating the stupid, the lazy, and the improvident. Within the tropics, on the contrary, such people can raise a family as indifferently well as the industrious. In fact, according to Huntington, if not, it seems, according to all medical opinion, indolence has a direct survival value in the tropics. For the expenditure of too much energy exhausts the human organism and renders it less resistant to disease. People in the tropics, therefore, have become relatively indolent, not merely because life is easy and the climate enervating, but because the more energetic and vigorous types have been eliminated.[1]

Similarly the "superiority" of Europeans in general, and of the Nordics in particular, is attributed to the selective agency of migration and survival during the glacial epochs of prehistoric times. On the other hand, the intense cold suffered by the ancestors of the American Indians during their long migrations through north-east Asia and Alaska to their present home eliminated all the more nervous, active types. Those who survived, no matter what race they represented, were left a uniformly dull, passive people, rather lacking in originality and the qualities which make for human progress. These features characterize their descendants to this day. Similar factors account for the differences between the Chinese of the North and those of the South, for the stamina of the Eskimos and the big buttocks of the Bushmen. In fact, wherever differences in temperament, in ability, and in energy are manifested by modern peoples,

---

[1] Huntington, *The Human Habitat*, pp. 97–8.

Huntington appeals to real or imaginary processes of selection to explain them.[1]

Climate, however, also has a much more immediate and direct effect on economic development by its influence on the desire and the ability to work. The optimum conditions of climate for human progress would, of course, depend to a large extent on the state of a people's material development. The naked savage can live comfortably only in hot climates. With each improvement in the technique of providing against cold, the invention of clothes, fire, windows, or trade, there has been a movement of civilization into colder regions. Refrigeration, the control of tropical diseases, and the use of machinery and of insulating materials, on the other hand, are setting in a reverse movement to the tropics. An increased proportion of the wealth of modern societies, besides, is being produced in establishments where artificial atmospheric conditions prevail.

The changes of temperature to which the large masses of human beings on the world are ordinarily exposed seem to have little influence on their *ability* to work. It is often maintained that intense heat makes hard work impossible. Experiments under controlled conditions show no such effects.[2] In Egypt, India, Cambodia, Java, and Guatemala, besides, there are remains of civilizations which show what was probably the greatest expenditure of physical energy ever expended in the history of the world. Very hot and humid climates are often considered dangerous to the human constitution. Yet large communities continuously survive wet-bulb temperatures of 85° to 90° F. The powers of adaptation of the healthy human body to extreme conditions of climate are remarkable. The Yaghans of Tierra Del Fuego go fishing quite naked, even though the water is full of ice. The Eskimo thinks nothing of exposing himself unclothed to a temperature of fifty degrees below zero. The differences in the biological ability of different races to endure extreme conditions of temperature are not well known. A broad nose, supple and oily skin, rich vascular supply beneath the skin, large sweat ducts, everted lips, and superficially placed hair roots which allow the blood vessels to lie near the surface, enable some races to rid themselves freely of superfluous heat. It is generally assumed that blacks endure high temperatures better than whites. But experience seems to show that, apart from actinic effects from which black pigment in the skin shields the deeper structures, the white man can stand as much heat as the black.[1] In the long run, however, the tropics seems to have deleterious effects on the digestive system of Europeans, on the action of their hearts, and their powers of resistance to infectious diseases.[2] Experiments in the Johannesburg mines, besides, show wide individual differences within the same races in the ability to withstand conditions of high temperature and pressure.

---

[1] Huntington, *The Character of Races*, Chs. IV and V.

[2] Gregory, *The Menace of Colour*, Ch. VIII.

Temperature seems to influence economic development by its effect on the *desire* to work rather than on the *ability* to work, in so far as these two factors are independent. Warm climates are universally referred to as enervating and relaxing, cold climates as bracing and invigorating. In warm temperate countries there is a marked reduction in energy during the summer and an increase of energy during winter. The midday siesta is an almost universal practice in countries where the heat of the day tends to be oppressive.

Experiments seem to show that a temperature varying from 59° to 68° F. secures the greatest well-being of the human organism, with the least expenditure of energy on its part. When the temperature rises above this optimum the organism reacts, not by diminishing its output of heat, but by freeing itself, especially through perspiration, of the heat produced. The cooling effect of perspiration, however, decreases as the proportion of water vapour in the air increases. The hot humidity often found in the tropics is therefore extremely uncomfortable. When the temperature falls, on the other hand, the activity of the muscular and the nervous system is stimulated. Clothes and other artificial devices have enabled human beings to push the resistance to cold to very low limits. A considerably lower temperature than that considered the optimum for human comfort may therefore be good for human progress. Excessive cold, however, like excessive heat, lowers the nervous energy and diminishes muscular activity.[1]

---

[1] Gregory, *op. cit.*, Ch. VIII, pp. 182, 214.

[2] Borchardt, *op. cit.*, p. 37.

Experiments in Germany and America seem to show that the optimum climatic conditions for the output of human energy vary from 38° to 50° F. for mental, and from 53° to 65° F. for physical work, with a relative humidity of from 60 to 40 per cent. The best climate to ensure human progress, according to Huntington, is a temperature which, on the average for day and night, does not rise above 70° in summer or fall below 40° F. in winter. The extremes may of course be greater. For people who heat their houses mental activity seems to be greatest at a temperature as low as 38° F. Physical health and activity, on the other hand, are at their height when the outdoor temperature averages about 64° F. An ideal climate would be that of England, which ranges from the physical optimum in summer to the mental optimum in winter. These conditions hold for the most diverse peoples. Both the Finns of the North and the Sicilians of the South seem to enjoy the best health when their respective countries most nearly approach this ideal climate. Even the Negroes of the United States, though they are accustomed to a climate considerably higher than the optimum, seem to work best at a temperature of about 70° F. This adaptation to a temperate climate is so universal, according to Huntington, that it may be a primitive trait belonging to the whole human race.[2]

A fairly high degree of humidity further appears to be an advantage at moderately low, but not at high temperatures. A decrease in atmospheric pressure leads to a reduction in mental energy. Variability and storminess in the weather, on the other hand, act as stimulants. Moderate heat and cold in alternation have a much more invigorating effect than has either when continued without change. This variability depends chiefly on the range of temperature from the warmest to the coldest part of the year and on the number of cyclonic storms. In the equatorial belt the temperature is little below that of the human body; the sluggish air is almost saturated with vapour during most of the year, and even the nights do not bring much relief. Similar conditions prevail during the rainy season in the tropical belts between the Equator and the Trade-wind deserts. This includes the Sudan, India, much of China, the north of Australia, Brazil, Central America, and the south-east of the United States. Here the cooler and drier winters, however, provide an agreeable variation.

---

[1] Huggard, *A Handbook of Climatic Treatment*, p. 76.

[2] Huntington, *Civilization and Climate*, Ch. VII; *The Character of Races*, pp. 22, 290.

The evils of the tropics Huntington ascribes as much to the unchangeable character of the climate as to the humidity and heat. He even maintains it to be a biological law that a tropical environment, because of its uniformity, tends to perpetuate primitive, unspecialized forms.[1] Storminess, as much as coolness, on the other hand, accounts for the domination of northern America and north-western Europe to-day as it did for the Mediterranean countries in the more stormy epochs before Christ.

A number of facts combine to show that important climatic changes have, indeed, taken place within historical times, although there is no proof of any permanent progressive change of climate. The amplitude of these oscillations in the weather has also become progressively less during the process of recovery from the glacial maximum. The movements of the cyclonic belt can be correlated with important historical events. Thus the "Heroic Age" of Ireland and the barbarian invasions of Mesopotamia and Egypt, dating about

[1] Huntington, *The Character of Races*, p. 50.

2000 B.C., are contemporary with a long period of drought. This process of desiccation was due to an elevation of Europe along its central axis which caused the cyclones to follow a more northerly track. About 1000 B.C. a fresh submergence brought renewed cyclonic storms to the Eurasiatic steppes and to the Mediterranean regions. The Bronze Age culture of Norway perished. The lake dwellings of Central Europe were drowned by rising lake levels. Around the Mediterranean there arose the great civilizations of Greece, Carthage, and Rome. These conditions continued till the third century A.D., with a temporary decrease in the rainfall about 200 B.C. Then a renewed dry period set in. Agriculture decayed in the Mediterranean countries. The drift to the towns assumed alarming proportions. Stagnant waters supplied breeding grounds for mosquitoes, and malaria became endemic, sapping the vitality first of the Greeks, then of the Romans. Continual invasions from the steppe finally resulted in the complete destruction of the civilizations of antiquity. This dry phase persisted till the tenth and eleventh centuries. The mild climate of the North enabled Norway to establish colonies in Greenland, where cattle thrived and corn was grown with success. Then the climate began to swing back towards moister and colder conditions. The glories of the Mediterranean were revived to a certain extent by the city states of Italy and the Moslem culture of Spain. The level of the Caspian Sea rose; the inhabitants of the steppe were peaceful and contented; the Norwegian colonies in Greenland were frozen out of existence. In the sixteenth century the curve swung back to drier, warmer, and less stormy conditions. Since then the amplitude of these climatic changes has become insignificant.[1]

The indirect cultural effects due to environmental influences are perhaps even more important than the direct. For each environment supplies the material basis on which a culture has to depend. Traits such as food, dress, dwellings, artifacts or the means of transport are to a large extent dependent on a people's surroundings. The physical milieu therefore naturally affects material traits more than immaterial ones, and its influence in characterizing a culture is greater the lower is the technical control of a people over its surroundings and the more pronounced is the dominance of the environment.[1]

---

[1] Brooks, *The Evolution of Climate*, Chs. XIII–XVII; Huntington and Visher, *Climatic Changes*, Chs. V–VI. For a quite different interpretation of the causes of the decline of Greece and Rome, cf. Rostovtzeff, *Social and Economic History of the Roman Empire.*

Each environment presents opportunities and obstacles, but the extent to which the opportunities will be utilized and the obstacles overcome depends on the aptitude of the inhabitants. The surroundings supply the raw material, but the finished fabrics are the product of a people's culture. Thus intense cold practically induces those who are to survive to construct warm shelters. But a wide choice is left as to the form and methods of construction. The Eskimos make their houses of snow, the peoples of northern Asia of skins, the Athabascan Indians of northern Canada shiver in partially open tents, and the Yaghans suffer terribly from an Antarctic climate with practically no cover at all. Further, whereas those Athabascan tribes living farthest north are merely provided with miserable tents, those living farthest south enjoy warm underground houses. The explanation lies, not in geographical necessities, but in the accidents of culture contact. Much more than needs suggesting means for their satisfaction, it is rather the accidental discovery of articles which are found to be useful which develops specific needs. But the extent to which new discoveries and inventions will be appreciated and adopted may depend to a large extent on environmental stimuli.

---

[1] The influence of a highly specialized environment in characterizing a people's culture is illustrated in the ways of life of the Semang and the Sakai inhabiting the Malay Peninsula. "The fate of their scanty bands has been a never-ending struggle for existence against the forces of nature, against hunger, disease, and a hundred forms of death, thus faithfully mirroring the battle of the gigantic vegetation and dangerous beasts among which they lived. The shadow, the hall-mark of the primeval forest—at once their protector, their sustainer, and their grave—is burned into them, and shows itself in the restless motion and hunted expression of their eyes, and even in their very gait. . . . It was the forest that supplied them with food, shelter, clothing, ornaments, implements of every description, with drugs and simples when they were sick, with materials and subjects for their dances, feasts, songs, instruments of music. . . . It was the forest that received their dead into its kindly bosom; indeed, to be laid to rest in the cool outstretched arms of the great forest-trees was the highest honour that could be paid to their departed chiefs. Their simple idea of the delights of a future state was after all but a glorified 'Avilion,' an 'island of Fruits,' from which all that was noxious and distressing to man (and therefore to man's soul) had been eliminated, and the very entrance to which lay over the natural bridge formed by the trunk of a fallen tree." Skeat and Blagden, *Pagan Races of the Malay Peninsula*, Vol. I, p. 13.

Whenever, however, a number of factors combine to produce a given effect, each of these factors can easily be shown to be the decisive one by the simple expedient of showing that the result could not have been attained without its co-operation. On this naïve basis environmental, economic, racial, and diffusionist interpretations of history have been built. As the thread of each factor is delicately interwoven throughout the fabric of a people's culture, environmental factors can easily be shown to have contributed, even if only in the most indirect ways, to all the forms of expression, both material and immaterial, of a people's culture.

The most sanguine environmentalist should, however, be perplexed by the frequent examples where the correlation between certain cultural expressions and particular environmental influences is lacking. Huntington himself notes this in a survey of civilization and climate in pre-Columbian America:

> The most advanced American aborigines lived in regions which rank low in both health and climate. In the tropical plateaus where dwelt the Aztecs and Incas the climate, though cool, is so monotonous that it is unstimulating. On the other hand, in the bracing climate of the northern United States east of the Rocky Mountains, the American Indians were mere savages, living largely by hunting, while southern and central California were inhabited by almost the lowest of the aborigines.[1]

According to Nordenskiöld a surprisingly large proportion of the inventions made by American Indians

---

Huntington, *The Character of Races*, p. 88.

came from the low-lying, unhealthy, tropical region of the Amazon basin. Those contributed by the Indians north of Mexico, on the other hand, were remarkably small.[1]

Huntington has tried to explain away some of these "anomalies" as best he could. Many others can, however, be advanced. For there are numerous examples where very different cultures are found in identical physical surroundings. Great civilizations, besides, have been built up under adverse conditions. A barren soil in fact sometimes seems to promote the growth of industry and commerce. This is found not merely in parts of modern Melanesia, but in ancient Greece. Thus Aegina early became an important commercial centre "inasmuch as its population, owing to the barrenness of the lands, engaged in maritime trade."[2] Some cultures have suddenly risen to greatness, others have as rapidly decayed, without any noticeable change having taken place in the climatic factor. A torrid climate is generally considered inimical to human progress. Yet "there is not an essential known feature of human culture which has an origin outside the tropical and subtropical regions.[3] On the other hand, the crudest cultures are often found in the most favourable surroundings. Lastly, traits adopted in one environment have persisted tenaciously on migration to other quite inappropriate surroundings, whereas they have sometimes disappeared where the physical conditions seemed best suited for their conservation and perfection. Thus the Yakut took their cattle with them on migrating to the north of Siberia, and have been able to maintain these only with the greatest exertions, in a climate for which they are entirely unsuited. The people of the Torres Islands, on the other hand, lost their means of navigation. Environmental factors definitely *prevent* certain things from being done and *enable* others to be accomplished. But they are never mandatory. Animals or plants cannot be domesticated where the wild species do not appear, nor metals smelted where ore is not available. Primitive peoples have, however, sometimes developed an efficient technique in the manufacture of raw materials which their own surroundings lacked, but which they obtained by exchange. On the other hand, the presence of raw materials is not enough to ensure their utilization. If that had been so, mankind would have been spared an apprenticeship of a hundred thousand years of hunting and collecting, with only the most rudimentary of stone implements.[1]

---

[1] E. Nordenskiöld, *The American Indian as an Inventor*, pp. 277, 284.

[2] Strabo, VIII, 376.

[3] Tozzer, *Social Origins and Social Continuities*, p. 42.

Cultural differences may, on the other hand, be biologically determined. The claims that have been made for race as the dynamic factor in cultural development have been even greater than those made for the physical environment. For differences in environment are things tangible and fairly easily perceptible, whereas racial differences are more subtle, and therefore a more profitable field for speculation.

Factors of racial temperament, character, and intellect, it has especially been asserted, have played an important part in economic aptitude and economic development throughout the world. This superiority is sometimes claimed for the white peoples in general, more often for the Nordic in particular. On the other hand, the relative stability of the coloured races, and of the Negroids more specifically, is attributed to fundamental differences in brain capacity.

Race theorists appeal to the fact that as genetic differences which affect physical traits exist among races, it seems probable that genetic differences which affect their mental characteristics are also likely to be present. For if mutations have occurred which have affected all sorts of morphological features such as the skeletal, muscular, circulatory, and secretory systems, mutations must also have arisen which have affected their nervous system, and produced differences in brain capacity. It has, on the other hand, been pointed out that whereas natural selection would make for a diversity of physical traits in response to different environments, it would hardly lead to an equal variety in mental traits, since the same kind of rational response would be beneficial in the most varied environments. This, as has already been seen, is exactly what the environmentalists deny who emphasize the selective agency of different kinds of surroundings. It may, besides, be maintained that the perpetuation through natural selection of a modification in one system, such as the skeleton, may bring about a correlative modification in another system, for example, in cranial capacity.

---

[1] Tozzer, *op. cit.*, pp. 50–1; Dixon, *The Building of Cultures*, Ch. I; Lowie, *Are we Civilized?* Ch. III.

Natural selection, however, merely acts as a sieve for the factors which present themselves as mutations. As mutant genes seem much more often to be harmful rather than beneficial to the organism, continuous selection is especially necessary to prevent degeneration. It provides that, of the innumerable genetic differences existing among the individuals of all races, only those will survive which are best adapted to the old or to a new environment. It does not mean that the survivors will produce offspring which will vary further in the direction of selection, thus initiating a creative and cumulative process. At best, therefore, the crossing of individuals with different factorial endowments may lead to the generation of sports, and the continuous selection of a given trait will sort out a strain possessing the most favourable assemblage of factors producing that character. The competition between races may also lead to the supplanting of the less intelligent by the more intelligent ones. But no amount of reshuffling and new combinations of genes can create hereditary units which were not already present in the initial individuals.

The influence of natural selection in bringing about race differences would depend largely on the rate of mutation, as well as on the degree of isolation of the various races. Little, however, is known of the nature of mutations except that certain alleged causes have been definitely disproved. The latest work in genetics, for example, has made it extremely unlikely, if it has not definitely disproved, that acquired characters are inherited. Besides, even if in rare cases the modifications of a character were to bring about mutations in the genes, it would be very unlikely that the effect of the mutation would be to reproduce the character which caused the change. Nor does the environment seem to be able to produce permanent biological changes. For in the case of the human being such a finely adjusted regulatory apparatus has been developed that any effective modification of the external conditions has been definitely precluded. Domestication, on the other hand, by affording better opportunities for the survival of mutations, may be an important condition for their reproduction and development. These facts remove much of the substance of race theories which appeal for support to genetics.

Anatomical studies with regard to significant structural differences in the biological equipment of different races have yielded hardly more positive results. In the evolution of the vertebrates a progressive increase has generally taken place in the relative size of the brain. The skull has therefore tended to become rounder in order to accommodate the larger brain, so that the length-breadth and also the height-breadth indices have tended to increase. This seems also to have happened in the case of human beings. The embryos of higher forms of animals usually resemble structurally their adult predecessors which lived in past times. In the case of the human being the brain of the foetus and the newborn baby is usually rather long, the skull is more dolichocephalic, and shows an increasing brachycephaly in the first months after birth.

This is in accord with the theories of racial evolution and migration as expounded by certain geographers and anthropologists. Mankind evolved in Central Asia under the stimulus mainly of severe climatic changes. The various stages in the biological development of mankind have been characterized by progressive steps towards the evolution of rounder heads. Such heads are biologically the highest and most specialized because they can hold the largest brain in proportion to their surface and weight. As each higher race evolved it pushed the earlier ones before it. The different races therefore are to be found in irregular concentric circles, in the order of their development, round the centre of the Eur-Asian Continent. This centre is occupied by the broadheaded Alpine peoples, who represent the latest phase in racial evolution. As we proceed away from this centre the races become gradually more dolichocephalic. The most primitive existing races are to-day found on the margins of the world, or as outliers in inaccessible and undesired deserts, tropical jungles, or rugged mountains—in the slums of the world—where they have found a resting place, and where they have stagnated. These peoples are all characterized by very long, narrow, and low heads, and consequently by a small brain capacity.[1]

It is difficult to see why the stimuli influencing human evolution should throughout the ages have been greatest in one centre only. For evolution is a continuous process operating on all species in all places so that, as different groups of pre-human and human stock dispersed, they would continue to evolve and to differentiate in a number of favourable geographic areas. It has also been maintained that in the case of human beings the differences in cephalization are too slight for them to exercise much influence on the general brain shape. Thus whereas the Australians and Negroes, whose relative skull capacity is smaller than that of the European, are both dolichocephalic, of the two races with the highest coefficient, the Eskimos and the Japanese, the former are very dolichocephalic, while the majority of the latter are meso- and sub-brachycephalic.[2] Investigations made in different parts of Europe seem, however, to confirm the view that brachycephaly is the form of the skull which best favours the development of large brains. The broadest heads are, with few exceptions found in Europe, the narrowest in Australia and in Africa.[1]

---

[1] Cf. Taylor, *Environment and Race*; Dixon, *The Racial History of Man.*

[2] Ariëns Kappers, *On Some Correlations Between Skull and Brain*, Royal Society of London, 1932, p. 402.

But even if cranial indices are assumed to be a good criterion of brain capacity, the connection between brain weight and intelligence is still obscure. That there must be some connection is suggested by the facts of comparative anatomy, embryology, anthropology, and morbid anatomy.[2] Thus the microcephalic, with brains weighing sometimes not more than 300 grammes, is a type of primary amentia. Among the higher mammals the proportionate size of the brain increases with the increase in intelligence. Among human beings the Pygmies especially are characterized by very small brain weights. Cranial capacities measuring less than 1,000 c.c. are, for example, quite common among the Veddahs, the Australian aborigines, and the Bushmen.

The mere weight of the brain, however, is not an adequate criterion of intellectual ability. For the weight of the brain depends not merely on the nerve cells and fibres, but also on tissue which has nothing to do with the functioning of the central nervous system. An exceptionally large brain, therefore, by no means necessarily implies exceptional ability. It, in fact, rather suggests a pathological development.[3] The size of the brain varies with the weight of the body, though the relation is not direct for the smaller varieties have relatively bigger brains.[4] As could therefore be expected tall people have, on the whole, heavier brains than short ones, but, relatively to their height, short people have the larger brains. Prominent people generally belong to the better nourished class, and therefore naturally have larger average brains than the labouring class. The size of the brains of eminent men, besides, shows considerable variation. Some, like Cromwell (2,233 gms.), Bismarck (1,867), and Cuvier (1,861), indeed had enormous brains. Those of others fall far below the average. The brain of Leibniz, "who discovered the calculus, wrote indifferently on philosophy, and managed the finances of a German state," weighed only 1,257 grammes; that of Anatole France at his prime probably no more than 1,138 grammes. The correlation between head size and intelligence, though it seems to be significant, is not at all close. Pearson found that in the case of English school children it was not even large enough for prognosis.[1]

---

[1] Martin, *Lehrbuch der Anthropologie*, Vol. II, pp. 747–8, 768.

[2] Gillespie, *The Mind in Daily Life*, p. 29.

[3] Schwalbe and Fischer, *Anthropologie*, p. 44.

[4] Schwalbe and Fischer, *op. cit.*, p. 43.

The structure of the brain is more important than its size. Comparative anatomical studies of the brains of different races may therefore be expected to give more positive results. But there is the difficulty of the lack of knowledge of the functional value of structural differences, as well as the grave danger that, on account of the lack of primitive material, individual variations may be interpreted as racial characters.

It seems that conspicuous changes have taken place in the mid-frontal region of the brain during the course of human evolution. The mid-frontal sulcus, continuous in the case of primitive man as in the case of apes, has, in recent man, broken up into several parts, usually arches, and lost its connection with the pre-cental.

It is an interesting fact that the uninterrupted condition of the mid-frontal and its continuity with the inferior pre-cental by the arch is so evident in some lower palaeolithic casts, and that amongst recent human races this occurs more in dolichocephalic than in brachycephalic brains, and especially in the dolichocephalic Negroes.

The fissural changes occur especially in the field containing the centre for the conjugate deviation of the eyes and the area where fronto-pontine fibres and perhaps where cerebello-rubro-frontal impulses arrive. According to Ariëns Kappers, it would not be strange if the gradual increase in importance of the centre of conjugate deviation and functions connected with cerebellar projections should result in breaking up the fissural arrangement, originally quite simple, of this part of the frontal lobe.[1]

---

[1] Hogben, *Genetic Principles in Medicine and Social Science*, Ch. V; Boas, *Anthropology and Modern Life*. Ch. II.

It appears that in animals the degree of lamination and differentiation of the nerve-cells in the cortex corresponds with the stage of evolution attained by the particular species. The cortex is thicker and more highly evolved in man and the higher types of mammals than in lower forms. The more superficial strata of the cortex containing the pyramidal cells are developed latest, and the human cortex is specially characterized by the great development of these cells.

The recent investigations by Dr. Vint, the pathologist of the Kenya Government, of the brains of one hundred normal adult male Natives therefore seem to be significant. He found the cortex of the native brain to be narrower than that of the European. The pyramidal cells of the supra-granular cortex and the Betz cells of the motor area are smaller in the native brain than in the European. It appears further that, though there was no reduction in the number of cells in any given area, the native cortex displayed a remarkable predominance of undifferentiated cells.[2] As the subjective element in such investigations, however, is very big, these conclusions should, as yet, be taken with the greatest reserve.

According to Dr. Gordon, visiting physician to the Nairobi Mental Hospital, it further appears that the Native curve of the development of brain capacity ends before that of the European. For whereas the cranial capacity of both increases until the age of puberty, after that age the curve for Europeans rises steeply, whereas that for the Natives scarcely rises at all. The curve for the Native remains more or less flat throughout, which seems to indicate a lack of cerebral development.[3] Even among Europeans, however, it is generally held that the growth of the brain in size is almost complete at the age of fifteen. By the middle of the fifth year the brain has reached over 90 per cent of its adult weight. After that age the increase in weight is comparatively slow.[1]

---

[1] Ariëns Kappers, *op. cit.*

[2] Vint, "The Brain of the Kenya Native," *Journal of Anatomy*, January 1934; Gordon, Letter in *The Times*, December 8, 1933.

[3] *The Times*, December 8, 1933.

Other associated anatomical characters have also been recorded, and especially the early closing of the sutures of the skull of the primitive. It has been maintained that the order of closure of the cranial sutures differs also in the various apes, and it has been suggested that the order and time of closure may have some definite relation to their different degrees of cerebral development.[2]

Accompanying these anatomical features there is a precocious mental development of the primitive child which, however, comes to an abrupt end at the age of puberty. The precocity of savage children, whether in the arts of gaining a livelihood or in the acquisition of school knowledge, is universally testified. The evidence is, however, as unanimous that, at the age of puberty, when the European child begins to develop his best powers, the savage becomes dull and all mental development ceases. Ethnologists usually attribute this "mental ossification" to the over-indulgence in sexual life which begins at puberty, to the absence of further mental stimuli, and to the repressive weight of a harsh struggle for existence which faces the primitive child at an early age. For throughout the animal kingdom there seems to be a correlation between cerebral development and the prolongation of the immaturity of the young.[3]

Intelligence tests to elucidate the problem have hitherto all yielded negative results. In none of these tests can individual experience be eliminated. Such tests, if criteria of intelligence at all, are more or less comparable as between individuals of different races, therefore, only if these have an identical cultural background. Thus there are marked distinctions in the test scores of groups of children belonging to different social groups, or between rural and urban societies within the same countries. That these differences are determined, at least to a large extent, by environmental facts is shown by the improvement in the scores when the surroundings are improved. Comparisons in the United States, based on the mean intelligence quotient of Negro and European groups, have often been vitiated by the inequality of the respective environments. Tests made by the United States army psychologists showed a marked superiority of the Negroes of the North over those of the South, as well as a superiority of the Negroes in several of the Northern States over the whites in several of the Southern States. Investigations have shown that this cannot be attributed to a selective migration of the more intelligent Negroes to the north, It has, on the contrary, been shown that there is a definite tendency for the test scores of Negro children to improve in proportion to the length of their residence in the more favourable environment. In recent studies in New York, Negro children have obtained results equal to those of white children. Similar studies in Europe have failed to reveal any superiority of one physical type, whether Alpine, Nordic, or Mediterranean, over another.[1]

---

[1] Gillespie, *op. cit.*, p. 26; Martin, *op. cit.*, pp. 744–5.

[2] Harris, *University College Hospital Magazine*, London, Vol. 13, No. 3, p. 84.

[3] Briffault, *The Mothers*, Vol. I, pp. 100–10.

It is often asserted that the Negro excels in linguistic tests, but is relatively weak in arithmetic.[2] Davenport and Steggerda applied a number of tests to a fairly large sample of Europeans and Negroes in Jamaica, living as nearby as possible under similar social and economic conditions, and having about the same amount of scholastic training. The results seem to show that the white adults excel in verbal tests, the blacks on the other hand in arithmetic. The authors even pretend to know the anatomical cause. "It seems a plausible hypothesis for which there is a considerable support," they say, "that the more complicated a brain, the more numerous its association fibres, the less satisfactorily it performs the simple numerical problems which a calculating machine does so quickly and accurately."[1] The disinterested reader would therefore come to the conclusion that what the authors believe their tests to test is not intelligence, but the absence of it. When intelligence tests have been standardized on European girls and boys alike, there seems to be a tendency for girls to excel in those tests in which linguistic factors predominate, and boys in those in which mechanical or mathematical abilities are involved.[2] Yet no one would credit the female with a more complicated brain than the male, simply because her reactions in some respects tend to be less stable.

---

[1] "Mental Tests," *Encyclopaedia of the Social Sciences.*

[2] Cf., for example, Allier, *Le Non-Civilise et Nous*, p. 254.

The marked individual differences in test scores which are found within the same national economic groups seem to be best explained by the assumption of unequal intellectual endowment. But if differences do exist in the innate mental endowment of different races, they seem to be far more subtle than the crudities of testing technique can as yet detect. For these tests are most effective in analysing the lower mental operations, which are more of a physiological than of a psychological character. They cannot test differences in innate creative ability which would be relevant to the study of cultural development.

But it has been argued that even though races do not differ much in their average mental endowments, they seem to differ considerably in the dispersion of these qualities about the average. They differ especially in the frequency with which they produce men of genius, both in number and in degree of mental endowment. For although, for example, there have been brilliant Negroes, these have been relatively few in number, and although these have been far above the Negro and White average, they have fallen far short of the levels of genius attained by Europeans. If invention and initiative are largely the monopoly of men of exceptional ability, then such a difference, if it does exist, must be of decisive importance in the development of civilization and the predominance of individual peoples. The role of genius in social development, however, as well as the effect of social conditions in affording opportunities for the development and recognition of genius, are factors the significance of which are as yet not well understood.

---

[1] Davenport and Steggerda, *Race Crossing in Jamaica*, p. 469.

[2] "Mental Tests," *The Encyclopaedia of the Social Sciences.*

An appeal may be made to genetics for the belief in differences in the dispersion of mental qualities. When races differing genetically mix, they are likely to produce offspring with more varied genetic constitutions than those which distinguish the original populations. For one race would usually differ from another in more genes than would individuals belonging to the same race. The offspring from race mixture will tend to combine all these different hereditary units in every possible new form of recombination. Such crosses are not necessarily good. They are likely to be harmful, however, only when the two initial races were distinguished by relatively pure and highly stable genetic combinations of mutant characters, purified by long generations of careful selection and inbreeding.[1] If due allowance is made for the inferior social conditions of the hybrid, there seems to be no evidence of evil effects, either physical or mental, that can be ascribed to race mixture. This is least likely to be the case over the largest part of Europe and Asia where racial crossing has been frequent and continuous from the earliest times. Similarly the size of the population in which inbreeding takes place is important. For the greater the group the greater the possible variety of gene combinations, and the larger the number of exceptional combinations which produce superior as well as inferior individuals.

To race mixture has been attributed the cause of the intellectual superiority of Europeans as a whole and of individual peoples in particular. But, according to Dixon, it is especially where the three most favoured races, the Alpine, the Caspian, and the Mediterranean, have met and mingled that the highest cultural achievements have been attained. To it is ascribed the rise of Mesopotamian civilization, the glory of Greece, and the

[1] Hogben, *op. cit.*, pp. 141–3.

greatness of Rome.[1] As race migration and race mingling have been constant from the earliest times, there is hardly a cultural movement of importance which cannot, in the last resort, be referred to race mixture. The effects of hybridization on the variability of mental traits have, however, not yet been satisfactorily investigated. But it should be borne in mind that, as in the case of selection, race mixture will bring about new combinations of hereditary units, but by itself it cannot endow people with genes which were not already present in the initial populations.

Primitive communities, on the other hand, have been doubly unfortunate. Unfortunate culturally in their isolation and lack of contact with the outside world; unfortunate biologically in losing to a large extent the quickening and varying stimuli of race mixture. For most primitive peoples, on account of their isolation and the smallness of the groups, marry within a very restricted circle. This is the case even where the rule of exogamy is strictly observed. For intermarriage commonly takes place for generation after generation between two groups only, the members thus standing to one another in the relationship of cousins, and in reality forming a single larger group. Among a large number of primitive peoples in every part of the world, the marriage of first cousins is regarded not only as the most proper and desirable union, but even as a moral obligation.[2]

Beliefs in the evil effects of consanguineous marriages are widespread, and are found also among savages. The older ethnologists even accounted for the origin of exogamy by the fact that, the evil effects resulting from the union of persons related by blood having obtruded themselves on the notice of primitive peoples, the elders took counsel and decided that such unions should in future be strictly prohibited. Conclusions, however, which are still the subject of controversy among scientists, would certainly be precocious in the case of peoples who fail to recognize the evils of child marriage, and have very crude notions with regard to the physiology of parenthood.

---

[1] Dixon, *The Racial History of Man*, pp. 509 sqq.

[2] Briffault, *op. cit.*, Vol. I, pp. 217, 564 sqq.

In the human race there are numbers of undesirable recessive genes, widely disseminated, which persist in spite of their deleterious effects, because in hybrids they are hidden. Closely related persons, however, are more likely to be hybrid for the same mutant gene, so that unions between them will produce children some of whom will be pure for the gene. Recessive genes may also be beneficial, and geniuses, like race horses, are often the outcome of inmarriage. On account, however, of the highly organized nature of the human organism they are more likely to be harmful. Genius, in fact, seems often to be associated with pathological characters.[1] These facts form the foundation for the popular belief in the evil effects of consanguineous marriages. When no deleterious recessive genes are present an inbreeding community can, if healthy, and if new and unfavourable mutants do not arise, maintain itself in health and vigour for an infinite time. Numerous examples can be found of isolated communities where the closest inbreeding has, after centuries, left a healthy and vigorous population. In the royal families of Egypt, Peru, and Siam brother-sister marriages produced for generations a large progeny of energetic and enterprising individuals. Briffault, after an exhaustive survey, concludes that no examples can be found where in primitive communities inbreeding has resulted in any loss, either of fertility, or of physical and psychical vitality.[2]

Beliefs in the different mental endowments of the various races receive their chief support from the present correlation between physical types and particular forms of culture. For such evidence to constitute a proof, however, it is necessary that the correlation should hold invariably. But great cultural changes have taken place in the history of all the peoples who have been considered as specially gifted. These changes have sometimes occurred so rapidly that there could have been no question of significant changes in their genetic endowments, either through the rise of new mutations, or through the process of selection. The ancestors of the civilized peoples of to-day were, until comparatively recent times, barbarians whose favourite pastimes are now considered as the typical vices of savages. Until the significance of differences in brain structure can be better determined, therefore, it will always be legitimate to infer that cultural differences are themselves culturally determined facts, which can be explained only in terms of themselves.[1]

---

[1] Kretschmer, *The Psychology of Men of Genius*, Chs. I–IV.

[2] Briffault, *op. cit.*, Vol. I, pp. 217–42.

Cultural differences must, in fact, be attributed largely to the specific history of different peoples. That the development of human culture must have been a laborious process can be seen from the extremely slow development of primitive communities, as well as from the very rudimentary nature of their culture. For by far the largest part of his existence on earth man roamed about as a hunter and collector, without agriculture or domestic animals. As contrasted with the millennia of savagery, civilization is a question of barely six thousand years. Most of the things which we consider as most characteristic of our present-day civilization have been invented only during the last fifty years. The rate of historical progress has increased progressively.

The stability of primitive culture was a universal fact indiscriminate of race or environment. It must therefore be attributed to the condition of life itself. An undeveloped technique and a small and scattered population, in fact, produce habits of thought and action from which primitive societies find it very difficult to free themselves by their own unaided effort. The initial surmounting of these obstacles proved mankind's most difficult task.

[1] The causal relationship between race and culture, besides, does not seem to be one-sided. For the process of domestication has no doubt played an important part in the perpetuation of the physical characteristics which differentiate human types. The problem is therefore not only to determine the influence of race on culture, but also the part that culture has played in the selection of physical types.

The world of the primitive is small both geographically and historically. Geographically his world ends outside the sphere of his own immediate neighbourhood and that of his neighbours. Historically what is beyond the knowledge of his grandfathers is the realm of mythology and of uncontrolled imagination. The continuity of life in pre-literate societies is assured by the products of material culture and by traditions handed down verbally from generation to generation. The lack of written records makes it impossible to standardize concepts and to accumulate objective knowledge beyond the mental powers of the immediate number of bearers. The sphere of knowledge is thus definitely restricted to certain limited conditions of time, opportunity, and place.

Where personal experience and the acquisition of oral traditions are the only sources of knowledge, age is a great advantage. The elder who has lived through a relatively long period of the history of his group, and has been able, through his predecessors, to acquire a large part of the accumulated wisdom of the community, becomes the living embodiment of the culture of his society. Such men naturally become the legislators and the leaders, to whom men turn for advice and guidance. The result of such conditions is the stressing of convention, the subordination of individual initiative to collective control, and the exploitation of youth by age.

An undeveloped technique, on the other hand, makes men occupied too much with the daily necessities of earning a livelihood to have time for reflection and disinterested observation. Civilization was the product of leisure, even though it was only the leisure of a privileged class. Immediacy of interest and attention is the essential characteristic of primitive mentality. The methods of thought of the savage, therefore, are not analytical and abstract, but complex and concrete. Within the limited sphere of his knowledge and experience his powers of observation are often remarkable, but his powers of co-ordination, of seeing the functional relationship between things, are undeveloped.

The concrete character of primitive thought is reflected in language. The speech of primitive peoples develops to convey impressions of specific activities and emotions, not to express process of abstract thought. Their languages are all characterized by a great wealth of words and expressions which portray concrete acts and complex situations. The Arabs, for example, are said to have no fewer than 5,744 names for the camel, according to the sex, age, or condition of the animal. This makes a big claim on the memory, further enhanced by the fact that oral tradition is the only means of accumulating knowledge. Memory tends to take the place of the faculty of seeing the logical relationship between things. Their languages are poor in concepts with general content. They seem to think more in images than in words, thus losing the power of fixing, standardizing, and making accurate ideas as letters make words or machines tools. The result is expression by means of symbols instead of concepts, and the large use made of metaphors. The primitive mind grasps at analogies which appear to be a sufficient explanation. The result is processes of thought which we call magical.[1]

Magic is the product of limited and uncritically evaluated knowledge, and of a logic which works with crude symbolical concepts and causal processes which are not analytical. The working of the physical world, for the primitive, is not subject to uniformities, but is conceived on the analogy of human actions. The primitive, of course, has acquired a large body of ascertained empirical facts. This knowledge forms the basis of his technique. But he knows from experience that empirical knowledge and human action are not enough, for his best planned and executed work may be rendered futile by the unforeseeable facts of nature. In his case the unknown and uncontrollable assume such vast proportions as to become awe-inspiring. But the unknown is mysterious and dangerous, and there is therefore a strong urge to exercise control. As this cannot be done by empirical methods, he resorts to supernatural means.

---

[1] Thurnwald, "Primitives Denken," *Reallexikon der Vorgeschichte*; Moelia, *Het Primitieve Denken in de Moderne Wetenschap.*

It is therefore especially with the region of doubt, ignorance, and danger that magic deals. With regard to all the most dangerous and uncontrollable arts practised by primitive man magic is highly developed. It is found among the most primitive peoples in connection with hunting. Later it developed especially in association with the vagaries of primitive agriculture, and above all in connection with the dangerous art of sailing. On the other hand, magic is absent from the homely arts of making fire or baskets, where ordinary skill is certain to obtain the desired effect.

This correlation between the assumption of risk and the practice of magic does not, however, hold invariably. Thus magic is used in the preparation of sour milk in Toda dairies, and in agriculture it is especially highly developed in the tropical island regions of the Papuans, where less hazardous conditions can hardly be imagined. The exercise of magic is much more developed with some primitive peoples than with others, being merely on the level of modern superstitions among some of the American Indians, but an indispensable adjunct to every activity in parts of western Melanesia. It seems on the whole to be more developed among the higher than among the lower primitives.

It is sometimes asserted that magic exercises a salutary influence in primitive society. Besides serving as a valuable human support and an effective emotional release, it supplies, according to Malinowski, "most of the co-ordinating and driving forces of labour, it develops the qualities of forethought, of order, of steadiness and punctuality, which are essential to all successful enterprise."[1] Magic not only has important effects in stimulating production, but also in preserving and safeguarding the products of communal labour. For in a society where locks and bolts are unknown, where crops lie unprotected on the fields and the village may be denuded of life during the day, some effective sanction is required for those whose social sense is not sufficiently developed. Magic, Malinowski further asserts, is never used to replace work. The soil is not less carefully cultivated or the fences made less solid because magic has been exercised over them, or the craftsman less careful and logical in the construction of his canoe because it has been made in conformance with the correct ritual. Magic, it is asserted, is used merely to control the elements lying outside the possibilities of human influence, the elements of chance or luck or the knack of doing things successfully. Its exercise lends the strength of conviction that the supernatural as well as the natural elements are co-operating to attain the end desired.[1]

---

[1] (Quoted) "Magic," *The Encyclopaedia of the Social Sciences.*

But the fact that magic may have beneficent effects merely shows that any sanction may be used by a specific group in a socially desirable way. It does not prove that its effect is not fundamentally to retard development and to frustrate the rise of other sanctions which may be socially more desirable. For the effects of magic must be to weaken intellectual inquisitiveness, to encourage the indulgence in vain procedures for controlling the universe, instead of the profitable application of developing a technique for specific ends; to substitute unreal for real achievement, imagination for action, and to breed an easy fatalism which will prevent the building of fences to keep off crocodiles, or the taking of suitable measures to prevent disease.[2]

If magic is a spiritual aid it is not technically innocuous. Spiritual stimulants, besides, are useful only where will power, not where precision or clear thinking, is needed. For if magic lends confidence, that faith prevents the fixing of the attention on what is rational in the traditional procedure, and the more the attention is concentrated on the efficacy of the magic, the less incentive is there to attempt to improve the empirical methods. Belief, therefore, instead of stimulating the mind to new enterprise, disposes it on the contrary to accept submissively the methods delivered by tradition and to repeat them automatically and scrupulously. As the procedure, to be magically efficacious, has to be scrupulously correct, there is little possibility of new variations arising by accidents which might suggest improvements. The spiritual attitude which magic works up is besides favourable neither to the appreciation, still less to the adoption, of novelties. It confuses the mind and fixes the attention on all kinds of irrelevant details. The mystery and secrecy in which the whole process is shrouded tends to neither the improvement nor to the diffusion of useful arts. It has, in fact, often led to the degeneration and even to the complete loss of essential crafts.[1] Failures are attributed, not to the inadequacy of the empirical methods employed, but to the lack of conformity with the magical requirements, to bad intentions, or to counter magic. This leads to the smelling out of innocent victims with disastrous physical effects to some, and an atmosphere of uncertainty, fear, and mental stupor which pervades the whole community. Magic is indeed a parasitic adjunct to technique which sometimes completely immobilizes it.[2]

---

[1] Malinowski, Article "Culture." *Encyclopaedia of Social Sciences.*

[2] Cf. Article "Magic" in *Encyclopaedia of Social Sciences.*

It is this supernatural fatalism which gives primitive thought its inert and indifferent character, its lack of spiritual self-assertiveness, its uncritical acceptance of traditional custom and belief. The spiritual attitude of the primitive is against the introduction of novelties. The adoption of new methods will naturally meet with the more obstacles the greater is the break with existing tradition and the more important are the institutions that are endangered by the introduction of the new ways. It would be thought that improvements in technique, being merely means to ends, would be relatively easy of adoption. But in primitive societies the exercise of specific crafts is associated with tabus and magical processes which reinforce the usual spiritual inertia. This is illustrated by Tylor's account of the Dayaks of Borneo, whose cross-grain method of felling trees was held to be ritually sacred, and departures from which were therefore punished by a fine. Yet so well aware were they of the superior European method of cutting out wedges, that they would use it surreptitiously whenever they could trust each other not to tell. Numerous meaningless injunctions, which depend for their validity not on the effects of the actions prohibited, but merely on emotional associations, enforce conformity with existing practice. Novelties, whether arising from within the community or suggested by outside contact, need for their adoption the goodwill and support of those in authority, and this is extremely difficult where the traits have to conform to the cultural pattern set by the elders and the specialists in magic. The intense struggle for existence, which forces the adoption of novelties in competitive society, is almost completely lacking in these small, isolated communities.

---

[1] Cf. Rivers, *Psychology and Ethnology*, pp. 203–8.

[2] Cf. Allier, *Le Non-Civilisé et Nous*, Chs. III and IV.

Primitive societies, also, are characterized by a strong internal balance and uniformity. There is little differentiation, in ideas, interests, or occupations. There is, therefore, little of the conflicts of beliefs and interests which afford the civilized individual the opportunity to review his own ideas in the light of others. Habits, on the contrary, are so uniform as to be accepted automatically. Deviations immediately evoke the strongest ridicule and resistance. To laugh at the idiosyncrasies of others is, according to McDougall, an innate propensity of human beings.[1]

> The fear of ridicule is a great positive factor in the lives of primitive peoples. It is the preserver of the established order of things, and more potent and tyrannous than the most restrictive and coercive of positive injunctions possibly could be. As a conservative force it takes its place by the side of primitive man's sense of a social world distinct from the individual, and his theory of the unchangeableness of group phenomena.[2]

---

[1] McDougall, *The Energies of Men*, p. 98.

[2] Paul Radin, *Primitive Man as Philosopher*, p. 51; Boas, *Anthropology and Modern Life*, Ch. VII.

Social control is the more pervasive as the primitive enjoys no privacy. He is always in company. The communal character of his economic relations further reduces the scope for individual initiative. Action and even thought are corporate affairs. For each individual there is pointed out a definite course in advance, which saves him the trouble of thinking for himself. This creates a balance between needs and the means for their satisfaction, both spiritually and physically, which are reflected outwardly in the happy disposition of the savage.[1]

The conservative character of primitive society is the main factor stressed in arguments with regard to the relative importance of the two main sources of progress in society; the development of technique by discoveries and inventions, and the influences of culture contact which spread the benefits of these inventions and disrupt accepted mental horizons. It is differences in the stress that must be laid on these two factors, respectively, as means of social development that account mainly for the differences in opinion between evolutionists and diffusionists.

The similarity of cultural traits in societies between whom intercourse is not known to have taken place evolutionists ascribe to the fact that common needs and aspirations may, in similar surroundings, have evolved the same basic artifacts and institutions. The psychic unity of mankind has everywhere in response to similar stimuli evolved the same fundamental means for their satisfaction. It is therefore not only possible but probable, evolutionists maintain, that the same basic inventions were made in a number of different parts of the world. It is, of course, admitted that this holds only with regard to the simple inventions which are not the products of too great a specialization or individualized expression. The result, however, is a process of development which is indeed gradual, by imperceptible gradations as it were, but the cumulative effect of which is to make mankind pass everywhere through the same elementary economic stages.

---

[1] Thurnwald, *op. cit.*

Inventions, however, are not merely the outcome of needs, but of numerous associations which the mind utilizes for the educing of correlates. Specific needs, in fact, are only awakened by new inventions and discoveries. Similar end results, on the other hand, have often been attained along different lines as a result of the limitations imposed on development by the material and the functions to be fulfilled. As in the biological, so also in the social world, convergence has played an important part. Parallel development has been less frequent than evolutionists are inclined to maintain. The conception of self-generating and progressive stages of human development, through which all peoples must inevitably pass, is untenable. The history of human progress has not been rectilineal. Stability has been frequent, and reversions are not unknown. Human development has, on the contrary, everywhere been a very complex and individualized process, conditioned by the specific cultural history of each individual people, and especially by the numerous influences of culture contact.

It is these influences of culture contact which are stressed by the diffusionists. Impressed by the inertia of human nature, they refuse to believe that cultural traits are the spontaneous creations of the human intellect arising independently in different parts of the world. Similarities, on the contrary, are due rather to imitation and acquisition from others. For human beings have always found it much easier to borrow than to originate things for themselves. Whereas Bastian spoke of the appalling monotony of the fundamental ideas of mankind all over the globe, diffusionists, on the other hand, maintain that inventions were made only once in the history of mankind, usually accidentally, almost never from rational motives. From these centres of origin they spread all over the world. When once an idea is known, of course, different applications of it may be made to suit different surroundings. Thus the Polynesian house being unsuited to the colder climate of southern New

Zealand, the Maoris resorted to pit dwellings. But for the more extreme exponents of diffusion it is inconceivable that even the simplest inventions, to say nothing of inventions as complicated as pottery, agriculture, or the domestication of animals, could have been repeated in the history of mankind. For the more complex the article the larger would have been the number of successive stages which led to its perfection, and the less therefore the probability that the same sequence of events could have occurred independently in different parts of the world. Whereas, therefore, according to the evolutionists the development of culture is self-generating and inevitable, according to the diffusionists it is largely a fortuitous process.

The explanation of cultural similarities by diffusion is favoured by the fact that it can be definitely demonstrated in specific instances, whereas appeals to independent invention must always remain hypothetical. It is the culture of America which presents the greatest difficulties to diffusionist theories. For the Old World—Eurasia, Africa, and the islands of the Pacific—forms one great unit which offers no impossible barriers to the migration of peoples and cultures, and over the greater part of which intercourse has been frequent and continuous. America, on the other hand, approaches the Old World only by way of the Bering Strait. From the rest of the world it is separated by three thousand miles or more of open sea. Diffusionists nevertheless find it impossible to believe that agriculture, the art of navigation, the domestication of animals, or the textile and metal industries, had developed independently on the American continent. They try, on the contrary, to account for them by the enterprise of Polynesian mariners, or by the results of migrations over the Bering Sea.

All immigrants, however, who reached America by way of the Bering Sea had to pass an Arctic barrier, so that in north-eastern Asia and in Alaska most of the traits which had originated in more temperate climates would have tended to disappear.

How could the textile art, dependent on plants and animals, that did not and could not live in this environment, pass through this ice-bound gate, whose keepers needed skins, not cloth, to keep out the biting cold? or agriculture, or a score of other traits? The bars erected by this grimmest of environments were rigid and close set, and let but little filter through.

The nature and number of the traits which survived would have depended on the rapidity of migration. This must have been a very slow process, for people do not willingly and rapidly pass into a more and more unfavourable environment. It seems, besides, that only people already long domiciled in the Arctic could have effected it. In the New World, therefore, civilization had largely to begin anew. The first immigrants no doubt had acquired little in the Old World that they could not carry with them into the New. But later groups came, not as "children of the Sun" bringing the benefits of civilization to a savage world, but rather as hordes of barbarians, who had painfully to recreate a culture in a new world.[1]

The possibility of pre-Columbian intercourse between Polynesia and America presents greater difficulties. Many American objects have close analogies in the Malayo-Polynesian area. Among those economically significant are, suspension bridges, spear-throwers, hammocks, blow-pipes, instruments for beating bark-cloth, methods of weaving, plank canoes, tie-dying, irrigated terrace cultivation, several types of habitation and clothing, as well as the manufacture of basketry, pottery, and bronze implements. The distribution of many of these traits in the Old and New World respectively, however, does not favour the hypothesis of their transmission through the enterprise of Polynesian mariners. For many of these American traits find their parallels not in Polynesia but in Melanesia. On the other hand, in America the traits in question are usually found, not on the Pacific coast, but in or beyond the mountain ranges. The absence of other traits is still more significant. For the lack of the Old World food plants such as the banana, the sugar-cane and taro; of the domestic animals which the Polynesians always carried on their voyages of exploration; and above all of the outrigger canoe, the means of the diffusion of these traits, make any significant intercourse between the two continents inconceivable. The wide distribution of the American sweet potato in Polynesia seems to be the only tangible evidence that such intercourse had in fact taken place. The plants cultivated in the New World, on the other hand, were all of local origin, and must therefore have been domesticated by the Indians themselves. The majority of traits which diffusionists consider to have been introduced into the New World from the Old are either basically different from their supposed prototypes, or a much greater probability exists that they are of native American origin. For not only can all the stages of their development be traced on the American continent, but most of them seem to have attained a high state of development before the Polynesians colonized the islands of the Pacific. The diffusionist would therefore have to assume, not only that contact with the Old World did in fact take place, but that the inspiration was close and continuous. It is a well-known fact that the American Indians had made many discoveries and inventions which in pre-Columbian times were unknown in the Old World. It would, therefore, be unreasonable to deny categorically that they could also have invented the traits which they shared with the Old World.[1]

---

[1] Dixon, *The Building of Cultures*, p. 274. The cogency of this argument is considerably reduced, however, by the evidence of climatic changes.

The psychological processes involved in diffusion have also been contrasted with those connected with invention. Diffusion, it has been pointed out, is closely allied to tradition in that both pass culture on from one group to another. Tradition, however, is usually considered as operating more within the same group and therefore through time, diffusion as influences spreading between different groups, and therefore through space. Both factors are based on imitation. In tradition one part of the population follows another, it being usually the younger people who imitate their elders. In diffusion one population imitates another. Both are therefore conservative factors as contrasted with the creative element of invention. But whereas tradition often tends to become stereotyped and so inhibit further progress, contact between cultures may lead to the cross-fertilization of ideas and processes, and to the development of cultural novelties. Contact may suggest the application of processes to new material. Thus the domestication of one animal or plant would suggest the utilization of others. Or by the combination of old processes a new technique may arise. Thus the invention of the plough was probably the outcome of a union between herdsmen and hoe-cultivators.

---

[1] Dixon, *op. cit.*, Ch. VI; Nordenskiöld, *op. cit.*

Diffusion already begins within the same community, for novelties, the work of individuals, have to be adopted by the group if they are not to remain sterile. With the many forces making for cultural inertia in primitive society this primary diffusion is no easy matter. The trait then spreads within the same culture areas as a result of ordinary friendly intercourse, trade, tribal ceremonies, intermarriage, or migration. Traits thus adopted may be slowly modified by accidental variation, or by further discoveries and inventions.

The diffusion of traits between different culture areas is presented with even greater difficulties. For novelties introduced from outside are less likely to fit into the cultural traditions, to conform to the customs, knowledge, and ritual of the recipients, than those arising within the community. For a trait to be adopted it must satisfy a need in the new environment, must be appreciated, and must find there the necessary opportunities for its existence. Only those new features are adopted by a community for which it is culturally prepared. Thus the Maya Calendar did not spread to the surrounding tribes because their culture was too simple to make a calendar of any practical value. On the other hand, the diffusion of traits may be impeded by the existence of analogous, even though inferior, customs. Thus the Eskimos never domesticated the reindeer, in spite of their close contact with the Chuckchee, no doubt because they found dogs a quite efficient means of transport.[1] Similarly the use of bark-cloth in Polynesia suppressed the art of weaving. Lastly, the traits taken over are often transformed and adapted to their new cultural setting. Sometimes they are so completely changed with regard to form or function as to change in fact their very nature. Invention and diffusion are therefore mutually interacting factors in human development.

On account of the conservatism of primitive peoples anthropologists have been inclined to stress the more obvious and violent means of diffusion, such as migrations, conquest, slavery, or the capture of foreign women. The stimulus of war, besides, has in all phases of culture always been a strong incentive for the adoption of new inventions. It has especially been maintained that the different cultures of the world can be explained largely as the result of a series of successive world-wide migrations originating in Central Asia under the stimulus of great climatic changes. Each wave carried with it a distinct trait-complex, so that, wherever certain institutions are found, they are attached to, or at least were introduced by, representatives of certain racial groups. The distribution of some traits, such as the possession of the dog, the making of fire, or the use of stone implements, is so universal that they probably originated before the dispersal of modern man. With regard to the other traits, it is admitted that their connection with racial groups applies only to the fundamental features of a culture. For differentiation would naturally be expected as different branches of the same original group face new conditions of environment, invention, or culture contact. History, besides, shows that weaker peoples are not always pushed out, but that they are often subordinated, adopting the civilization of their conquerors, but at the same time exerting important influences on the dominant culture. On the whole, however, different cultures came to be superimposed on one another like successive lava flows.

---

[1] Dixon, *op. cit.*, pp. 107–9.

Culture historians, on the other hand, have shown that the slow and unobtrusive infiltration of traits through friendly intercourse has been a more important method of diffusion of cultural forms than the violent means of migration and conquest. The distribution of cultural elements is often quite independent of migrations or political and military events. Outstanding examples are the spread of the horse in America, of maize or manioc in Africa. It seems that, in the main, it is the subtle influences of ordinary human intercourse, and the almost unconscious penetration of new objects and ideas, which were the main means of the diffusion of the more important and higher forms of cultural phenomena.[1]

But however great the influence of the normal infiltration of ideas, it is obvious that the diffusion of culture has not proceeded mechanically and irresistibly, else all but the most remote populations of the world would long ago have been assimilated to the same cultural pattern.[2] Even in the case of primary diffusion, the distribution of culture by no means invariably takes the form of the spreading of concentric waves around an original centre. The diffusion of culture from a given nucleus, on the contrary, is often intermittent, and usually quite irregular in different directions, varying with differences in conservatism, surroundings, or the competition of existing traits. Migrations may spread a trait much more rapidly in one direction than in another. The original home of an invention may therefore not be centrally situated. Nor need the old centre necessarily be the place where new variations are most likely to originate, or even where elements originating elsewhere are synthesized to form new entities. Marginal areas, on the contrary, are sometimes more likely to receive inspirations from outside, which may lead to variations in traits or their application to new uses. In this way multiple trait nuclei may arise within an area.[1] As traits, however, usually pass from higher to lower cultures, the people in the outlying areas are likely to be more conservative. The borrowers of a new idea or technique may not only be incapable of developing it as quickly as the originators, but being unable to reproduce it correctly the process may degenerate completely.

---

[1] Article "Diffusionism," *Encyclopaedia of Social Sciences.*

[2] *Ibid.*

The influence of position on diffusion is obvious. For cultures which are accessible to the great currents of diffusion can profit by exotic traits, whereas those which are isolated in inaccessible islands or peninsulas, away from the main currents of migration and of commerce, have to rely on their own resources. The marginal peoples of the world, the Lapps, the Eskimos, or the Tasmanians, had to rely almost exclusively on themselves. Their cultures easily degenerated into a dull routine. In such isolated communities traits sometimes remained unchanged for thousands of years. Contact with the outside world, on the other hand, stimulates and fertilizes. To the Mediterranean world, especially, there came early and continuously the advantage of the impact of traits originating throughout the greater part of the Old World. The conditions for their spread were so favourable, and the competition so intense, that the less efficient traits could not survive.

It seems that on the whole material traits diffuse more readily than immaterial ones. The diffusion of material traits are, however, often restricted by the needs and opportunities of the environment, whereas immaterial ones may diffuse without any physical limits at all. Thus grain cannot be grown where the climate is unsuitable, or sledges used where there is no snow, or blow-pipes found outside the two areas where the bamboo grows. The alphabet and Christianity, on the other hand, have spread throughout the world. Social traits seem to diffuse most slowly of all. For a social organization is the product of a people's history around which numerous sentiments and interests have been built. A change therefore has to be accompanied by psychological, economic, and political changes which come about usually only as the result of a catastrophe.

---

[1] Dixon, *op. cit.*, Ch. VIII.

The current of diffusion is generally also in the direction of transfers from higher to lower cultures. For the higher culture would usually have many traits which a lower people coming in contact with them can profitably utilize. Many other traits, however, are likely to be incommensurate with the lower culture, and therefore not amenable to adoption. Or in the case of material traits they may be adopted only as objects of trade, the more backward people being unable to manufacture these for themselves. Where there is great disparity in culture, even casual contact, or the settlement of a few immigrants from a higher people, may cause a profound modification in the economic life of the lower population.

There are, however, also numerous cases on record where traits have passed from lower to higher cultures. This is especially the case with the adoption of new raw materials, but also of arts. Thus the Chinese, in their migration eastward, learned the art of navigation from the less cultured people in the coastal regions, an art which they perfected by the development of the sampan and the junk.

Similarly, within the community differences in status have an important influence on the diffusion of culture. People borrow from those whom they envy or respect. The lower classes like to imitate the higher. A progressive aristocracy may therefore play an important part in inducing a community to accept foreign novelties. On the other hand, however, rigid class distinctions may prove a barrier to the transmission of traits. The commoner may be prevented by tabus or by social restraints from imitating his superiors. Sometimes, as in parts of Africa to-day, it is the commoner who comes into contact with the outside world, and the chiefs who act as the conservative element.

The rate of diffusion has in the course of history, it seems, been a constantly accelerating one. On account of the smallness of primitive populations scattered in tiny groups over large areas, contacts must have been infrequent and diffusion normally a slow and laborious process. There are, however, cases where traits diffuse with remarkable rapidity in primitive societies. There is, for example, the uncanny rapidity with which news spreads among primitive peoples. New native songs are reported to have spread across the whole of the thinly inhabited Australian continent in the course of a year. The use of the horse, introduced into America by the Spaniards, spread over the whole of the North American plains up to the Canadian frontier in little more than a century. Tobacco, maize, and manioc were introduced into Africa after the discovery of the New World, and soon spread over the whole continent; the banana and the domestic fowl soon pervaded nearly the whole of South America. Normally, however, the process of diffusion in such societies is slow. With the growth of civilization there comes the increased thickness of population, improved means of transport, larger spheres of political authority, and greater facilities for trade and intercourse; all powerful factors in the spreading and standardizing of cultures throughout large areas of the world.

Of these elements then, the traits brought from outside and those forming each people's heritage and adopted or invented by them in their own specific environments, a people's culture is made. The character of that culture, its elasticity and vitality, will depend essentially on the extent to which it is made up of these component parts respectively, as well as in the ways in which the synthesis has been formed. Where the environment is strongly individualized so that the basic traits stand out in strong perspective, as with the Eskimos, a culture is likely to have a strong inner unity, a tenacity and conservatism which was especially characteristic of Ancient Egypt. Where exotic traits are frequently introduced, a culture will be more rich and varied, more mobile and adaptive, and more enterprising. Each culture therefore has within itself the germs of its own vitality. This energy will be reflected in all the spheres of economic activity.[1]

---

[1] Cf. Dixon, *op. cit.*, Chs. III and IV.

CHAPTER II

THE DEMOGRAPHIC ASPECT

As statistical data with regard to primitive peoples are either completely lacking or very unreliable, statements concerning the numbers of such societies must necessarily be of a qualitative character. All primitive peoples, however, are characterized by the smallness and relative stability of their populations. This is especially the case with regard to the lower primitives. Thus Tasmania at the time of its discovery does not seem to have had more than two thousand inhabitants. The Indian population north of Mexico before the arrival of the Europeans is estimated at only one million, or 14 persons per 100 square miles.[1]

This limitation in numbers is the more remarkable on account of the prevalent desire of these people for children. Children are desired because they are both a material blessing and a religious necessity. They begin at an early age to be a practical help in the struggle for existence, and in their parents' old age they serve as an assurance policy. Boys are a social asset in societies where social position is largely dependent on the number of a man's immediate relations. Girls have a distinct domestic and marriageable value. Like all other possessions, therefore, children enhance the prestige and the social worth of their parents, besides flattering their virility and their vanity. Not only ease and position in this life, but also peace and security in the next is dependent on the possession of children. For the spirit world being peopled with beings who in every way reflect their human predecessors, the correct burial and care of the dead are very important functions. Boys or girls are often preferred according to which sex best fulfils these duties. Thus it is said of certain African tribes that they mainly desire children in order to have sons to bury them properly and daughters to cry for them, although "they prefer daughters to sons, for there is not only the portion of their marriage money, but they cry longer and better than boys and men." In a strong patriarchal society such as the Chinese, on the other hand, where sons are desired to pay proper homage to the ancestral spirits, women are still sometimes beaten for the indiscretion of not bearing a son.[1]

---

[1] Willcox, *International Migrations*, Vol. II, p. 55.

Where there are no children it is always the fault of the woman, never that of the man. The lot of the childless woman is a miserable one. She is despised, ridiculed, and avoided because the spirits have refused to be reincarnated through her agency. The barren woman loses favour with her husband and becomes the drudge of the household. Usually she resorts to charms, sacrifices, and the help of the medicine man to procure the desired end. The position of the husband is sometimes hardly more enviable.

The desire for children is reflected in the institution of marriage. Marriage among primitive peoples is an extremely loose bond, and only becomes a relatively permanent union in the case of issue. Barrenness is usually an unequivocal cause for divorce; among most of the Bantu the only one not subject to litigation. Among these people it is common for the man to claim the sister of a sterile wife as compensation for the bride price. Sometimes, however, husbands will also exchange wives for a certain period, which method is said to be a very effective remedy for sterility.[2]

Where these methods of obviating sterility are ineffective recourse is had to adoption. In small communities based on kinship, with undeveloped notions of the physiological processes involved in generation, the distinction between the biological and the institutional methods of getting children is not very clear. Where marriage is more individualized in character and notions of parenthood more developed, an elaborate ceremony is often used to conceal the distinction. Thus in Borneo both parents observe, for some weeks before the ceremony of adoption, all the prohibitions usually complied with during the latter months of pregnancy. Finally the act of birth is imitated, and the child, if young, is put to the breast and encouraged to suck. So complete is the act of adoption that parents will not admit the fact. By such means men convince themselves, their neighbours, and the spirit world, that nothing has been changed in the natural course of events.[1]

---

[1] Miller, *The Child in Primitive Society*, pp. 64–7.

[2] Miller, *op. cit.*, p. 57.

The stability of primitive populations is also remarkable on account of the fact that the sexual life of savages begins early and remains, to a large extent, unrepressed throughout the duration of its existence. Pre-nuptial unchastity is more frequently condoned than condemned. This is especially the case among the lower primitives.[2] "It is fertility, not virginity, which is the dominant consideration in the qualifications of a bride."[3] Marriage does not make a material difference. "With many, perhaps with the majority of primitive peoples, extra-connubial freedom is but the normal and natural operation of the sexual functions, exercised with moderation and without excess."[4] Where unchastity is condemned it is more to safeguard the prerogatives of the male than to prevent the bearing of undesired offspring. Deliberate repression for this motive would to many primitive peoples be inconceivable.

For many illiterate peoples see only a vague connection between sexual congress and reproduction. At best congress is merely a condition, the man acting simply as a medium for the transmission of the ancestral spirits seeking rebirth through a woman. But it is by no means an essential condition, for the belief in parthenogenesis is universal. It was the usual way in which gods and heroes were conceived in antiquity. Among primitive peoples this privilege is by no means thus restricted, and the number of supernatural and physical agencies is very large. More care is therefore sometimes taken by women, who do not wish to have children, to avoid haunted spots, or to refrain from eating certain foods, to bathe at high tide, or to be caught in a storm, than to abstain from intercourse, which is largely unrestricted.[1]

---

[1] Miller, *op. cit.*, pp. 60–1.

[2] Hobhouse, Wheeler, and Ginsberg, *The Material Culture and Social Institutions of the Simpler Peoples*, p. 167.

[3] Briffault, *op. cit.*, Vol. III, p. 314.

[4] Briffault, *op. cit.*, Vol. II, p. 58.

On account of this lack of repression there are in primitive societies none of the preliminaries to the satisfaction of the sexual impulse which, in cultured societies, constitute the pre-nuptial period of courtship, and cause the sublimation of the instinct into romantic love. Forms of romance such as jealousy, the kiss, love literature, or even the aesthetic aspect of selecting a partner, are rare among primitive peoples. The absence of the sublimated and pathological paraphernalia usually associated with love in cultured societies has, on the other hand, been attributed to the low development of the genetic faculties of the savage. This, according to Crawley, is due to the hardships of their existence, and especially to the difficulty of finding a regular supply of good food. The development of cereal agriculture therefore had important physiological as well as cultural effects.[2] According to Professor Westermarck the pairing of the lowest existing savages, as that of their earliest human or half-human ancestors, is confined to certain seasons of the year. The increase of the mating impulse in spring among civilized peoples is therefore a survival.[3]

It is, however, extremely unlikely that seasonal pairing exists among the lowest savages in view of the fact that all the primates breed continuously, except the lemurs, which form a specialized and divergent group.[1] Seasonal intensifications of the mating impulse no doubt exist.

---

[1] Briffault, *op. cit.*, Vol. II, pp. 443–55.

[2] Crawley, *Studies of Savages and Sex*, Ch. I (2).

[3] Westermarck, *The History of Human Marriage*, Vol. I, p. 81.

> But in no primitive race is anything approaching to a yearly periodicity of reproductive functions observable. . . . There is all the difference between a seasonal accentuation and an exclusive reproductive season. The former is of little consequence. The fact which, on the contrary, is fraught with very considerable consequences, is that there is not, and has probably never been, any season of complete sexual quiescence in the human male.[2]

The influence of feeding on the fecundity of human beings has not yet been satisfactorily investigated.[3] The majority of biologists, however, seem to favour views which are the exact opposite to those expressed by Crawley. These views also have the support of biological analogies. For in unfavourable surroundings, selection tends to the extermination of individuals with genetic faculties below the average. Thus in the plant world under luxurious conditions vegetative processes and organs are abundant, whereas in sterile surroundings reproductive organs abound. Tropical jungle flora, for example, is characterized by a great profusion of leaves and other vegetable parts, whereas Arctic and desert flora has a profusion of flowers. But analogies between survival values in the animal or vegetable world and in human societies are often misleading. It is possible, however, that the consumption of abundant food, rich in proteins, may deleteriously affect the fertility of human beings. This may especially be the case if, as among some African peoples, an enormous development of adipose tissue is considered as an aesthetic ideal. Among the Tuareg this predilection is carried to such an extreme that a steatopygous female, who when once seated on the ground is unable to rise without assistance, is generally regarded as the ideal of female beauty. In many parts of Africa girls have to pass through a fattening house before marriage, where the consumption of enormous quantities of pultaceous food gives them the much desired figure.[1]

---

[1] Zuckerman, *Functional Affinities of Man, Monkeys, and Apes*, pp. 28–37.

[2] Briffault, *op. cit.*, Vol. II, pp. 402–3.

[3] Hogben, *op. cit.*, pp. 182–7.

Nor does polygyny seem to have marked deleterious effects on the growth of population. Polygyny is generally permitted among all uncivilized peoples, and increases with economic development, reaching its maximum, however, among pastoral peoples. Monogyny appears spasmodically in every form of culture except the pastoral, but it is important only under conditions of forest and jungle life.[2] The practice of polygyny is therefore correlated with the ability of the men to support a number of wives. Its absence among forest peoples is due to the fact that these communities are always living on the verge of starvation.

The reproductive process being periodic, there are long intervals during which mating is, for the female, biologically functionless. This is especially the case with primitive peoples where cohabitation ceases during the prolonged period of lactation. Polygyny will therefore be injurious to the reproductive powers of a people only if a few men succeed in cornering a very large number of women, and if the polygynous husbands are genetically decadent. This may be the case in primitive societies in view of the fact that the number of a man's wives increases rapidly with age. The exhaustion of the reproductive powers of the savage, on the other hand, sets in at a relatively early age. Thus whereas the proportion of the sexes are normally about even, there being usually a slight preponderance of men, the fact that girls marry earlier than men enables the oldest men to monopolize a large part of the young women, acquired often by the exchange of daughters. Young men therefore very often marry old women. An improvement in chastity and in marital conditions also usually accompanies the increase in polygyny.[3] The injurious effects of the institution on reproduction may, however, be partially neutralized by a lower infantile death rate. For polygynists are usually the most capable and the wealthiest individuals, who would be best able to support their offspring.

---

[1] Briffault, *op. cit.*, Vol. II, pp. 161–3.

[2] Hobhouse, Wheeler, and Ginsberg, *op. cit.*, pp. 162–3.

[3] Hobhouse, Wheeler, and Ginsberg, *op. cit.*, p. 169; Briffault, *op. cit.*, Vol. II, p. 271.

These facts may conceivably have influenced the powers of reproduction of primitive peoples. They do not seem, however, to have made a significant contribution. Throughout the primitive world, in fact, whether the genetic faculties of savages be more or less developed than those of civilized peoples, their powers of reproduction are capable of ensuring a rapidly increasing population. The growth of population has to be continuously restricted to the numbers which these communities are able or prepared to accept. As is the case with all primitive institutions these measures for the most part take the form of rigid tabus.

The desire for children, urgent as that longing is, is restricted not by the physiological inability of satisfying it, but by the limitations of that desire itself. For although men urgently desire children for economic and religious motives, the practical difficulties of rearing them may be a sufficient incentive to limit the number. An increase in the population, in fact, usually requires profound readjustments, involving either a deterioration in the customary standard of living, or the expending of more effort in gaining subsistence. Neither of these generally appeals to the savage. The alternative is either birth control or abortion and infanticide, practised indeed not as a deliberate and systematic population policy, but as the spontaneous reactions of individuals to immediate exigencies.

The primitive woman has a special inducement to curb the desire for children. For to rear a child, in addition to serving as a beast of burden, and performing all the drudgery of the household, is a heavy liability. The ambition of the woman is therefore usually satisfied when she has secured the favour of her husband by presenting him with a son. As in civilized society, however, more capricious motives for birth control are not wanting. These motives are especially cogent in the case of unmarried women. For although pre-nuptial unchastity is usually condoned, it is a fairly general rule that the bearing of children must be avoided.[1]

Methods of preventing conception seem to be fairly widely practised. Abortion is procured both by medicinal and mechanical methods. Some of the methods used are crude and ineffective, and often result in death, invalidism, and permanent sterility. Occasionally, however, they are so ingenious that the savages practising them must be credited with a considerable knowledge of the physiology of pregnancy and parturition.[2] The induction of abortion is widely practised, and the extinction of a member of native peoples has been attributed to the custom. The necessity and the morality of the act depend largely on the level of economic development attained. Among the lower primitives abortion is resorted to quite openly, no disgrace being as a rule attached to the usage. With the increase in the food supply and in male predominance the practice comes to be frowned upon, and payment sometimes has to be made to the chief who is deprived by it of a potential subject. With the domestication of animals the burden of the woman's work is reduced, her position becomes less favourable, and the practice very often comes to be regarded as a crime.[3]

Infanticide is another method of violent individual reaction against the dangers and privations of overpopulation. There is in primitive society no legal bar to prevent the practice, for the child before initiation has acquired no status as a member of the group. Supernatural sanctions are equally ineffective in the face of the concrete exigencies of life. For although the child is conceived as a reincarnation of an ancestor, the spirit is appeased by naïve arguments, such as the fact that it has been misadvised to make an ill-timed and inopportune appearance.

---

[1] Briffault, *op. cit.*, Vol. II, p. 25.

[2] McKenzie, *The Infancy of Medicine*, pp. 305–10.

[3] Miller, *op. cit.*, pp. 30–6.

During periods of privation infanticide would be a spontaneous act of self-preservation on the part of the group, and especially of the mother. Recurrent recourse to it may so colour popular sentiment that the institution may come to be regarded as a natural and expected measure against over-population. Failure to comply with the custom may even come to be regarded as improvidence, to which a social stigma is attached. With many primitive peoples infanticide is a regular practice.[1]

Infanticide is especially prevalent among the lower primitives. Pre-nuptial children are regularly destroyed among some peoples. South American tribes very often disposed of the first children born in marriage as well. The Guaycurus of Brazil were constantly diminishing because the women would not rear children till they were thirty. A number of tribes destroy all children after the third. Among some West African Negroes, the mother also is destroyed if she gives birth to more than four children. Other communities only allow infants to survive periodically so that there will be a limited number to care for and to transport at a given time. In some of the South Sea Islands two-thirds of the children are said to have been disposed of by infanticide. Almost all over the Pacific children were never really cared for; if they were not killed, they simply had to shift for themselves.[2]

Infanticide is sometimes practised for trivial reasons. Some mothers kill their new-born infants because of the trouble of rearing them; others because cohabitation ceases during the long period of lactation. Generally, however, it is due to the hardships of savage life. For the helpless infant is a great burden to its parents, especially in times of need. This accounts for the prevalence of the practice in nomadic communities and in islands where the opportunities for acquiring extra food are restricted. Infanticide diminishes, on the whole, with the development of culture. It is most prevalent among forest tribes. The position improves with the higher hunters, and still more with agricultural peoples. But pastoral peoples occupy by far the best position in this respect.[1] The domestication of animals furnishes the means of feeding children artificially. Such crude restrictions on the growth of population therefore become unnecessary, inexpedient, and immoral.[2]

---

[1] Miller, *op. cit.*, p. 46.

[2] Briffault, *op. cit.*, Vol. II, pp. 26–9; Roberts, *Population Problems of the Pacific*, p. 61.

Infanticide, abominable as the practice no doubt appears to civilized people, may nevertheless, if exercised rationally, afford a certain scope for eugenic selection. Sickly and peevish children are less likely to be tolerated than strong and healthy ones. In other respects, however, the tests applied by primitive peoples are naturally crude. All children must conform to the customary appearance and behaviour at birth. A deformed child is a devil, and if allowed to live the community will be plagued endlessly. Nor are primitive peoples unique in this respect. Luther, also, refused to baptize deformed children and cretins because they are beings without a soul and ought to be drowned. Even unpropitious dreams, or birth on an unlucky day, may be sufficient cause for the child's destruction. Thus the Kamchadales used to destroy children who were born in very stormy weather. In Madagascar all infants born in March or April, or in the last week of the month, or on Wednesday or Friday, were exposed or destroyed.

The birth of twins presents a double aspect. For if the provision for an additional child is often already a serious liability, the prospect of rearing two at once must be felt to be an unbearable burden. How, argues the Bantu woman, can she possibly rear two children at a time when she has only one back? In addition, the birth of twins is something unusual and mysterious. "The hand of the ghostly and ancestral is seen therein just as it shows itself in a plague or in a terrific storm." The attitude towards twins varies greatly, however, even in contiguous areas and among the same peoples. In some communities plural births are considered a great misfortune, and both infants are destroyed. The blame is put on the mother, who is considered unclean, or may be accused of adultery. Where conditions are more propitious one of the twins may be allowed to live, the killing of the other restoring conditions to the normal. Among some peoples, on the other hand, the birth of twins is hailed as an auspicious event. They are often considered as born magicians. Among the Nootkas of British Columbia the birth of twins is believed to herald a good salmon season. Among the Bakuba of the Congo the father is honoured by having a delegate at court. The conceptions of sacred and evil are here, as everywhere else, blurred in primitive thought. Thus Bavenda twins are killed because they are sacred beings and through their intervention with the ancestral spirits great benefits will acrue to the tribe. They are too sacred and too terrible to live.[1]

---

[1] Hobhouse, Wheeler, and Ginsberg, *op. cit.*, p. 243.

[2] Miller, *op. cit.*, p. 39.

Abortion and infanticide are violent methods of restricting the growth of population. There are, also, however, in primitive societies practices which affect the spacing-out of births through time. It is, in fact, a very general rule that cohabitation must cease during the time that the woman nurses her child. This period is much longer in savage than in civilized societies. Children practically wean themselves. It is no uncommon thing for a youngster who is running about and taking part in the games of other children to be still unweaned. From two to three years is the most general duration of nursing. Throughout the greater part of that time marital relations among many primitive peoples cease entirely. In some communities the conception of this continence is so rigid that at a suitable date after birth the parents are remarried.[2] "The relative infertility of savages as compared with European women," says Briffault, "which has been set down in turn to every custom and practice of which European sentiment disapproves, though it cannot be statistically or otherwise associated with any, has one constant cause, namely, the custom of suckling children, 'until they wean themselves,' that is for two, three, and not infrequently five years, or more."[1]

---

[1] Miller, *op. cit.*, pp. 44–6; Frazer, *The Magic Art*, pp. 262–9.

[2] Crawley, *op. cit.*, p. 69.

Primitive man naturally does not forgo instinctive urges in order to exercise a deliberate and enlightened population policy. The tabus on cohabitation are everywhere enforced by the most drastic sanctions. They form, in fact, only one aspect of the most general and stringent of all primitive tabus, namely, that on women during menstruation and during and after parturition. This seems to have been the prototype of all similar prohibitions, and thus forms the basis of all morality which, even in civilized societies, is synonymous with sexual continence.

Among all savages menstruating and puerperal women are rigidly segregated, or segregate themselves, as if they were lepers. Contact with or even the sight of such women, it is believed, would do grievous harm to the physique, the character, or the luck of men. Even their tools and weapons will lose their qualities and be rendered worthless. Among some Brazilian peoples the unfortunate girl during her first sickness is sewn up in a hammock and severely fumigated and starved. Sometimes she succumbs to the process of disinfection. Women during childbirth, when more than at any other time they need assistance, fare even worse. Everywhere the expectant mother leaves her home and bears her child in the open, or in rude shelters specially prepared for the purpose. Under such conditions, exposed to the wind and rain, even in the rude climates of Siberia or Tierra del Fuego, she is sometimes confined completely unattended. That the mother and child survive such treatment is a tribute to primitive vitality.

---

[1] Briffault, *op. cit.*, Vol. I, p. 219; Vol. II, pp. 390–401. The following are extreme examples: "Mrs. Atkinson saw Kirghis children of ten and eleven still being suckled by their mothers; and Dr. Kock-Grünberg saw on the Rio Tikie an overgrown nursling who interrupted his potations from the maternal breast to smoke a cigarette. In Madagascar a young mother of about thirteen who was nursing a baby of her own was still in the habit of being suckled by her mother." Briffault, *op. cit.*, Vol. II, p. 391.

It is an almost universal rule that a menstruating woman must not perform any kind of work. This tabu, like so many others, was carried to its logical conclusion in Hawaii, where the men do all the agricultural and household work, while the women do nothing but occupy themselves with their toilet. The restrictions imposed on the puerperal woman are often, however, extended also to her husband. Among some peoples the husband at such times may do no work, among others he is completely ostracized. Among the Naga tribes of Manipur the fact that a bitch has puppies or a cat kittens is enough to place the whole household under an interdict, and to prohibit them from doing useful labour. Sometimes these restrictions extend not merely to the inmates of the house, but to the whole community, who either have to cease work after the birth of a child, or to be thoroughly disinfected. These tabus attain their most picturesque and most ridiculous expression in the practice of couvade. The husband of the expectant woman takes to bed, simulates the pains of childbirth, and acts as if he instead of the woman were being delivered of child. To what extremes an institution may be carried is shown by the Jivaros of Ecuador. Here the "woman has to undergo all her parturient troubles outside the house, exposed to the elements, whilst the husband quietly reclines in the house, coddling and dieting himself for some days, until he has recovered from the shock produced on his system by the increased weight of his responsibilities as a father."[1]

These tabus on the performance of work come also to be associated especially with the phases of the moon, that luminary being regarded as the regulator and the cause of the periodical functions of women.[2] The moon is regarded as exercising a dangerous and malignant influence, this influence being greatest during certain phases of the lunar cycle, especially during the new and the full moon, but sometimes also during the whole period of the waning moon. The two great epochs of lunation therefore have a tabu or "sacred" character, and are observed over a large part of the world as rest days. Thus the Jewish Sabbath was primarily a new-moon and full-moon observance, extended later, as in many other instances, to each phase of the moon. These rest days have their origin, not in considerations of the benefit to be derived from the periodical cessation from work, but in the conviction that no work undertaken on such days could produce any good.

---

[1] Briffault, *op. cit.*, Vol. II, pp. 365–421; Miller, *op. cit.*, pp. 23–5.

[2] "The actual connection between the physiological and the lunar cycle is in all probability due, as Darwin suggested, to the fact that animal life developed

Besides these days associated with the moon there are numerous other unlucky days, tabued days, holy days, and market days, during which no useful labour may be performed. The institution of the rest day is therefore of economic interest mainly on account of its effect in retarding human progress. "They hinder individual initiative and tend to prevent the undertaking of lengthy enterprises which may be interrupted by the recurrence of an unfavourable period. Their extensive development compels fitful, intermittent labour, rather than a steady and continuous occupation." Thus in Ashanti there were formerly only from one hundred and fifty to one hundred and sixty days in the year during which business of any importance could be safely undertaken. In Abyssinia the numerous fasts and feasts are kept so strictly that about six months of the year are prohibited for any secular employments. Among the Sea Dayaks of Borneo "at certain seasons of the moon, just before and

during the greater part of its evolution in the sea. The vital rhythm, impressed once for all during incalculable ages upon all physiological functions in primitive marine forms of life by the periodical changes in the environment produced by tidal phenomena, has persisted in the periodical variations of all their descendants. The correctness of that hypothesis has received what appears to be conclusive confirmation from more recent knowledge. In a number of marine creatures it has been found that the reproductive cycle takes place in accordance with the phases of the moon." Briffault, *op. cit.*, Vol. II, pp. 429–30.

just after the full, they do not work at their farms; and what with bad omens, sounds, signs, adverse dreams, and deaths, two-thirds of their time is not spent in farm labour." Some Catholic countries are hardly better even to this day. In Mexico there are no less than one hundred and thirty-one holidays in the year, and it usually requires from one to three days more for the *peons* to sober up and get back to regular work again. In all Christian countries it is the observance of the Sabbath which has most clearly conserved the character of the primitive tabu.[1]

On account of all these prohibitions, the physical aspect of maternity is completely overshadowed by the spiritual factors. Special care for the expectant mother is entirely lacking. Her daily work continues up to the time of parturition and the period of convalescence is short. Little effective help is given to the parturient woman. The absence of midwives, in fact, is said to be often beneficial to both mother and child. The rough methods of confinement sometimes cause sterility after the first few births. Fortunately childbirth seems, on the whole, to be relatively easy. Abnormal presentation or delayed delivery is met generally by sympathetic magic, rarely by rational methods. The lids of boxes are opened, knots untied from pieces of cord, or the compressing armlets and anklets of the husband discarded. Money may also be jingled, chains rattled, or guns fired off, in order to stimulate the activity of the child in the uterus. The rational methods vary from the giving of drugs to the stimulation of the uterine muscle by massage. The degree of force applied to the uterus varies from gentle stroking with the finger-tips to vigorous thumping with clenched fists, kicking with the feet, or beating with some hard object. Pounding the abdomen with the feet, often with disastrous results, is resorted to by a number of peoples.[2]

As compared with these barbarous methods the rare examples of extremely ingenious treatment seem almost incredible. Thus in Damaraland the native midwives are said to be capable of rectifying malpositions by external manipulation alone, and to be often employed by European residents for the purpose. Felkin even witnessed the Caesarian Section performed successfully by a raw native doctor in Uganda. The skill and the daring displayed by this amateur surgeon would have aroused the admiration of a European specialist.[1]

---

[1] Webster, *Rest Days*; Briffault, *op. cit.*, Vol. II, pp. 419–39.

[2] McKenzie, *op. cit.*, pp. 330–1.

Should the child be desired, the care of the infant generally outweighs consideration for the mother.[2] The treatment of the child is not always irrational. It is washed, gently massaged, oiled, and wrapped in carefully. Among some peoples, however, the unfortunate newborn is subjected to prolonged and intermittent immersions in cold running water, or is plunged into a very hot bath. The absence of suitable artificial food is another serious disadvantage. Lactation is indeed continued for a long period, with beneficial effects for the child. But as the mother's milk usually becomes deficient after the first year the baby's power of resistance to disease is reduced. The results are feeding troubles in summer and pulmonary complications in winter. Investigations in Kenya show that the rate of increase in the weight of native and of English or American babies is roughly similar for the first ten months, but that thereafter the native infants increase much more slowly, and are on the average about 8 lb. lighter at thirty months.[3] South African experience shows that whereas among Europeans the high infantile mortality is confined to the first year of life, among the Bantu it continues to the third and fourth years.[4]

The mother's milk, however, is usually supplemented from a tender age with more solid food. In parts of Melanesia the infant is almost from the beginning given chewed taro and yam. Masticated food is especially injurious when the mother is in the habit, as is often the case, of chewing tobacco. Solid food such as bananas, sago, or rice is often given the child when it is not more than six months old. Nor is the child fed regularly and moderately, but is stuffed with food whenever it cries. All children, besides, whether weak or strong, are lavishly dosed with medicines. The unfortunate infant in Fiji begins life by receiving an emetic, for it is considered advantageous to begin life with a clean stomach. This is immediately followed by a cold bath.

---

[1] McKenzie, *op. cit.*, pp. 332–4.

[2] Sumner and Keller, *The Science of Society*, Vol. III, p. 1919.

[3] Orr and Gilks, *Studies of Nutrition*, p. 31.

[4] Sonnabend, *South African Journal of Economics*, September, 1934.

Babies are also continuously exposed to the sun's glare and to wind and rain. Darwin describes how a Fuegian woman, who was suckling a newly born infant, came one day alongside the ship and remained there out of mere curiosity, while "the sleet fell and thawed on her naked bosom and on the skin of her naked baby."[1] "I know no spectacle more wretched," says the Rev. Durrad, "than to see a tiny child, covered with sores and whimpering with misery and discomfort, being carried on a soaking wet day on the back of a woman whose garments are a sodden mass."[2]

Such conditions naturally tend to produce a high infantile death rate and a rigid process of selection. The vital statistics of primitive peoples are very unreliable, but it is often asserted that from one-third to two-thirds of all children born die in infancy. The souls of children, the Koryak say, are timed, and are therefore especially susceptible to the attacks of evil spirits.[3] Speaking of Melanesia, the Rev. Durrad says:[4]

> Only the very toughest can survive. . . . It is really surprising that any survive at all. Infected with malaria as they are from their first entry into the world, living in smoky huts, irregularly washed, subject to curious eruptions and itching inflammations, there is yet found a certain proportion of children who attain

---

[1] Darwin, *Naturalist's Voyage Round the World*, p. 213.

[2] *Essays on the Depopulation of Melanesia*, Edited by Rivers, p. 17.

[3] Hambly, *Origins of Education among Primitive People*, p. 91.

[4] *The Depopulation of Melanesia*, p. 16.

maturity. With proper care many would no doubt survive that now succumb in the struggle to live. One is justified in believing that if all the babies born were to grow up, these islands, instead of becoming more and more a wilderness, would soon be thickly populated.

The period of infancy is short in primitive society. Parents are kind and affectionate, if inconsistent, but indolent and apathetic. The life of the infant on the whole, however, is not a happy one. He has largely to shift for himself. Mere babies have to search for their own food. At an early age the child is put to work. The boys have to rise early to collect food, herd the cattle, and perform much of the drudgery about the house. The girl from a tender age becomes a beast of burden, and her loads increase rapidly with age. Childhood is therefore often grim and earnest. The whole universe, besides, swarms with evil spirits. There are numerous things that the child may not do: tabus on places he may not approach, sights he may not see, and food he may not eat. "Every fallen tree and shady nook, every peculiarly shaped stone and crooked stick harbours some force which may cripple or kill all who ignore it."[1] Socially the child is a nonentity, without status and without individuality. When the community is attacked it can expect to be neither pitied nor spared by the enemy.

Primitive children accordingly mature at an early age. Before puberty they often look old and worn, and imitate all the habits and vices of their parents. Old age sets in early, often already at the age of thirty-five. Life may be cut prematurely short by the abandonment or even the deliberate destruction of the aged. This is done either because of privation or from social and religious motives. The treatment of the aged and sick, however, differs greatly in different, and even in neighbouring, communities.[2] Even in England there is an old tradition of "the Holy Mawle, which they fancy hung behind the church door, which when the father was seaventi, the sonne might fetch to knock his father in the head, as effete and of no more use."[1]

---

[1] Helser, *Education of Primitive People*, p. 166.

[2] Koty, *Die Behandlung der Alten und Kranken bei den Naturvölkern.*

The effects of bad hygienic conditions and the lack of rational medical treatment are important factors accelerating the appearance of senility. The effects of insanitary conditions of living are traceable even in prehistoric times. The cave dwellers seem to have suffered terribly from dampness. The earth houses and lake dwellings were no improvements from an hygienic point of view. Gout must have been a prevalent disease. Its effects are seen in the skeletons of men as well as in those of cave-dwelling animals. Osteo-arthritis, which affects the spine, the large joints, and the base of the skull, and almost completely immobilizes the patient when only in the forties, reducing him to helpless inactivity, seems to have been a common plague in prehistoric times. Tuberculosis was another scourge of this illusory golden age.[2]

Dampness was not the only cause of bad hygienic conditions in prehistoric times. As in modern primitive settlements, the refuse was usually dumped in the immediate vicinity of the dwelling. Paleolithic man everywhere left the bones, unpalatable joints, and other offal mixed with the ashes of the hearth until, in the course of time, these accumulated into considerable heaps. Primitive settlements to-day have to be regularly shifted on account of the accumulation of refuse, and the evil effects of corpses buried in the immediate vicinity of, or even underneath, the houses. The interior of the dwellings is often worse. Small smoky houses without ventilation shelter not merely human beings but animals as well.

In the first towns in the Near East the refuse was probably thrown out of the houses into the narrow alleys, as the Fellachs, unconcerned with the evil hygienic effects, do to this day. The mud of collapsing houses in the course of time spread over the dirt so that the soil increased in layers. In Gezer it appears that open spaces were left within the town walls where the refuse was deposited and animals kept in times of siege. Pigs and dogs served as the scavengers of the streets.[1] Modern Addis Ababa is no better.[1]

---

[1] Westermarck, *The Origin and Development of the Moral Ideas*, Vol. I, p. 387.

[2] "Hygiene," "Arthritis," "Schwindsucht," *Reallexikon der Vorgeschichte.*

> It is one of the dirtiest cities in the world. There is no sanitary service of any kind. The street is the dustbin and garbage heap. Hyaenas which howl so mournfully at night time are the universal scavengers. Myriad huge eagles, hawks, and crows help to clear the streets by snatching away morsels of meat, bones, and filth.[2]

The natives of New Guinea prefer, where possible, to build in a swamp, as it saves them the trouble of burying their refuse. Over most of Polynesia, despite Government supervision, villages are direct invitations to miasmatic diseases.[3] Such conditions among primitive peoples are not to be wondered at. As late as the nineteenth century refuse was still off-laden in the immediate outskirts of European towns, and the atmosphere even in capital cities was abominable.

Disease takes a heavy toll in primitive society. It seems indeed that, through the process of selection, communities develop a measure of resistance to the diseases which are prevalent in their surroundings, the more susceptible members being eliminated, and a more resistant race built up in the course of time. Certain diseases undoubtedly pursue a milder course in communities in which they have been long endemic, whereas they assume a much more virulent form when introduced among a people for the first time. European diseases, and especially tuberculosis, dysentery, small-pox, measles, and venereal diseases, has each in turn played havoc with primitive populations since the era of European expansion which began in the sixteenth century.

In a society in which a disease is endemic, on the other hand, the greater part of the community is infected from infancy. Owing to the high mortality among the young, the weaker infants are eliminated and the more resistant acquire a tolerance to the disease by the time adolescence is reached. This seems to account mainly for the large measure of immunity from malaria of the adult section of native populations living in the tropics. This acquired immunity, besides, is confined to the malarial parasites existing in their own specific environment, and does not apply to parasites from other areas. Similarly those primitive peoples who have had long and close contact with Europeans show a high morbidity, but a comparatively low mortality to tuberculosis. On the other hand, those primitives who have only recently come in contact with civilized peoples show a low morbidity, but a very high mortality, the disease occurring here in its most acute form. Tropical examples of the tuberculized type of country are the tropical parts of the continent of Asia, the Philippines, Samoa, Hawaii, Réunion, Mauritius, and the West Indies; examples of the non-tuberculized type are tropical Africa and the greater number of the islands of the Pacific.[1]

---

[1] "Abfall," *Reallexikon.*

[2] *Rand Daily Mail.*

[3] Roberts, *op. cit.*, p. 84.

The effects of disease are accentuated not only by unhygienic conditions of living and bad therapeutics, but also by the attitude of the primitive towards infirmity. Disease is more a supernatural than a biological occurrence. The patient loses heart and is subjected to morbid influences. Resort is taken not to rational treatment, but to the local magician, who smells out the culprit. Thus several lives may be sacrificed where there need have been no victims at all. On account of this attitude insufficient care is often taken to isolate infectious cases. Babies may be taken care of by lepers. Diseased persons eat and sleep with the rest of the family. Venereal disease especially, on account of the sexual promiscuity of the savage, is soon spread among practically all the members of a community into which it has been introduced. Sometimes, on the other hand, the sick are abandoned by the rest of the community.[2]

The ravages of disease are accentuated by famine.

---

[1] Cunningham, "Some Factors in Racial Immunity and Susceptibility to Disease," *Man*, XXVI, pp. 120, 131.

[2] Koty, *op. cit.*

Until comparatively recent times famine was a regularly recurrent phenomenon, even in civilized societies. Among primitive peoples it is more acute because the available surplus is smaller and because they are more improvident. Hunting communities generally live on the verge of starvation. Their food is both poor and precarious and the supporting power of land extremely small. The food of the herdsman is both better and more regular. The carrying capacity of the land increases, and the infantile death-rate decreases through the utilization of animal milk. Most pastoral peoples, however, suffer from recurrent periods of drought which prevent the land from becoming densely populated and lead to continuous wars and migrations. Agriculture represents by far the most intensive utilization of the land. The food supply becomes more abundant, if not always more varied. But even the primitive agriculturist seems very often to suffer from undernutrition, or rather from malnutrition.[1] Agriculturists too, on account of their inefficient technique, are at the mercy of climatic influences. There are also regularly recurring failures of crops through the exhaustion of the soil, owing to the absence of fertilizers and of a suitable rotation of crops. This is especially the case where the population relies on one staple only. It is therefore no wonder that fertility rites abound in primitive religions, and have a very real significance. The effects of technical inefficiency are accentuated by social institutions, and especially by the giving of feasts, which easily exhaust a meagre surplus. Famine and under-nutrition eliminate the weak and reduce the resistance to disease of the rest of the community. They also encourage infanticide and the killing of the aged, and lead to migrations and to wars. They are therefore powerful factors restricting the growth of population.

The higher primitives try to meet recurrent periods of dearth by the elaborate storage of food. Traces of rooms for the storage of food have been found in the lake dwellings of Switzerland. The Badarians of Lower Egypt had underground granaries about 5000 B.C. The public storage and distribution of food played an especially important role in the social economies of ancient Egypt and Peru.

---

[1] Orr and Gilks, *op. cit.*, pp. 19, 56.

War and human sacrifice are other important factors tending to restrict the growth of primitive populations. The various forms of the institution of sacrifice are very old. They were no doubt originally associated with the observation that the loss of blood resulted in weakness, and ultimately in death. From this there followed the deduction that blood is the essence of life, and that blood, or any other substance resembling it, is a life-giving agency, which can be used to establish a vital alliance between men or between the human and the supernatural. "From time immemorial blood has been regarded as the restorer of life to the dead, the bestower of health and strength to the living, and the sacred bond uniting those who possessed a common soul-substance." It is because of this that the victor drinks the blood of his victim, thus absorbing his strength and courage. At the same time through the act the victor enters into a sacred bond with the victim, and thus escapes the revenge of the slain man by making him his kinsman. Similarly special parts of the body, the fat, heart, liver, nails, or placenta, may be considered as the seat of soul-substance or personality, and therefore of secret powers which may be absorbed by their consumption. These are the ideas behind cannibalism. Sometimes, indeed, the eating of human flesh is resorted to in a purely material form, as in some parts of the South Seas, where it is considered a welcome variant in a perpetual pork diet. Usually, however, the practice is ritualistic, and prevails mainly in districts well supplied with food. The idea of sacrifice, as against the mere consumption of human flesh, also gains in importance among the higher primitives.[1]

Not only men, however, but the gods also have to be revitalized and propitiated by the sacrifice of blood, in order that they may continue their beneficent functions towards mankind. Human sacrifices were made especially in times of national danger, such as the outbreak of war, pestilence, or famine. They are made also when laying the foundations of a new building or bridge, when launching a canoe, or when setting out on an expedition. The idea behind the "foundation-sacrifice" was no doubt originally to secure a ghost to keep watch over a valuable construction. The idea was then extended to cover all important enterprises. Later the institution was sublimated so as to require no human sacrifice at all. It was sufficient for any specific purpose to evoke one of the numerous spirits which fill the world by performing the proper coercive or propitiary rite.

---

[1] James, *Origins of Sacrifice.*

Victims are by some peoples also sacrificed to accompany the dead to the other world. The "grave-escort" consists especially of persons who had been intimately connected with the departed, his wife, his slaves, or even some of his subjects, if he had been a chief. For the next life being merely a projection of the earthly existence, the spirit will need these associates to administer to his welfare in his new home.[1]

Human sacrifice is especially prevalent among hoe cultivators. It is one of the ideas behind the practice of head-hunting, for a continual stream of victims is required to fertilize vegetable and animal life and to add to the general supply of vital essence in the community. In parts of the South Seas, "tribe after tribe has been completely wiped out by certain powerful chiefs through a continued series of head-hunting expeditions."[2] Human victims were sacrificed also to maintain the powers of the gods, and especially of the sun, on the occasion of the various seasonal functions of sowing and reaping, in order to enable them to maintain the agricultural year. According to Aztec belief four previous suns had been destroyed, each ending a world epoch and causing universal destruction. As the present luminary was in no more secure a position than its predecessors, continual seasonal sacrifices of human beings had to be made to renew its energy and to prevent the recurrence of the catastrophe. These ideas led to perpetual wars to secure an adequate supply of victims, without which the powers of the sun would wane and all natural processes cease.[1]

---

[1] Sumner and Keller, *op. cit.*, Vol. II, Ch. XXXVI.

[2] Sumner and Keller, *op. cit.*, p. 1260.

In agricultural societies, therefore, sacrifice was directed in the first instance to securing the growth of the crops and the maintenance of the sequence of vegetation. Where the king was considered as divine, and as the incorporation of the country's fertility, his life too stood at a premium. He was himself sacrificed before he lost his strength, in order that his vitality could be transferred unimpaired to a vigorous successor.[2] Most kings in the course of time induced their peoples to substitute commoners in their place. Human sacrifices were therefore made periodically to promote the health of the king, or merely to "set the land in order."[3] In West Africa hundreds of victims were massacred to take messages from the king to his ancestors.

Traces of cannibalism and sacrifice are found in all the continents. Cannibalism died out in Europe with the advent of civilization, although signs of it still survive in the medicinal values popularly attributed to the drinking of human blood. Cannibalism hardly exists in Asia and is rare in North America. In the rest of the world it appears in from 20 to 30 per cent of the peoples studied by Professors Hobhouse, Wheeler, and Ginsberg. It appears in all forms of primitive culture except the pastoral, in which it is a vanishing quantity. Human sacrifice is not found among pastoral peoples, nor among the lower hunters. But the practice is very prevalent in agricultural societies and increases with the stage of agricultural technique attained.[1] A number of primitive peoples have the tradition that the introduction of human sacrifice was a relatively recent development.[2]

---

[1] James, *op. cit.* The number of annual sacrifices is said by some authorities to have amounted to twenty thousand; according to others to as much as fifty thousand. As the total population of central America south of the Rio Grande in the seventeenth century is estimated at only five millions, both the above figures seem to be grossly exaggerated. Cf. Willcox, *op. cit.*, Vol. II, p. 62. "Recent researches justify us in believing that the number of the victims has been greatly exaggerated by the Spanish Historians. Conceding this exaggeration, it is probable that only in the interior of Africa could such wholesale slaughter as really occurred in Mexico be paralleled." (Quoted) Sumner and Keller, *op. cit.*, p. 1255.

[2] Frazer, *The Dying God.*

[3] Mair, *An African People in the Twentieth Century*, p. 179.

The institution of sacrifice is of economic importance, not merely on account of its demographic, but also because of its material effects. It implies the bearing of a burden. When man sacrifices to the gods he always offers his best. Very often his liberality cripples his domestic economy. The Koryak sacrificed their dogs, the Indians their horses, the ancient Greeks their cattle, in numbers which they could ill afford. No wonder that men often tried to discharge their duties to the gods while evading the attendant loss, thus attempting to obtain the best of both worlds.[3]

The need of victims for sacrifices is an important cause for raids, and even for organized warfare among primitive peoples. It is by no means the only cause. The peace between neighbouring communities is often interrupted by charges of murder, owing to the belief in witchcraft, and feuds result which may assume a more or less organized form. The blood feud is usually the only means of obtaining justice where central authority is undeveloped. But as primitive peoples are very sensitive to slander and to ridicule it leads to unnecessary feuds and bloodshed. Among the lower primitives it is sometimes not easy to distinguish between private retaliation and tribal raids. Feuds between members of the same larger community do not as a rule lead to the shedding of much blood. The object of the aggressor is satisfied when the enemy has been humiliated and his own honour vindicated. Fighting therefore aims at frightening away the opponent with a display of ugliness and noise rather than at killing. But feuds are often protracted, and are usually accompanied by the destruction of crops, which may reduce a population to dire straits.

---

[1] Hobhouse, Wheeler, and Ginsberg, *op. cit.*, pp. 240–3; Sumner and Keller, *op. cit.*, Vol. II, Ch. XXXVI.

[2] Westermarck, *op. cit.*, Vol. I, p. 437.

[3] Sumner and Keller, *op. cit.*, pp. 1219–22.

Organized warfare develops with the growth of movable property and the development of social organization. Its object is usually to plunder. Celtic tradition in Central Europe maintains that the wars of expansion were undertaken by bands of youth, who preferred to seek their fortunes in new lands rather than submit to the drudgery of clearing more forest or draining more swamps in their own country. Among most peoples the successful warrior is held in high esteem. The Scandinavians considered it a disgrace for a man to die without having shed human blood. Among many warlike peoples it is an indispensable condition of marriage that a man should have shown his worth as a defender of his country by killing a victim. Warfare is therefore an important factor keeping down the population of virile peoples. In parts of New Guinea whole districts were depopulated and entire tribes wiped out by raiders. The Cayuga tribes living along the Great Lakes of North America were becoming almost extinct in the sixteenth century on account of constant warfare. Where regular armies exist warfare becomes much more destructive. The original Dahomey stock disappeared completely through the great loss of life incurred in incessant wars. The wars which began with Tchaka wiped out the greater part of the Bantu population of South Africa. The first European settlers trekked from the Orange River to the Limpopo without meeting a single native.

Destructive as warfare and sacrifice no doubt are, however, they nevertheless play an important part in maintaining the vitality of primitive peoples. The mere removal of these institutions, therefore, without adequate substitutes being available to take their place, may be attended by much greater evils than these practices themselves. For war and head-hunting are important factors in maintaining the physical and spiritual energy of the savage. They also have important ramifications throughout the social structure, stimulating economic and social functions. Thus head-hunting is an essential adjunct to agricultural practice or to the building of a new house or canoe. "In the head-hunting districts of Melanesia, no house could be inhabited, no canoe be launched if heads were not at hand to be used as the offering which forms part of an organized cult of the dead."[1] The art of war is often the only effective means of maintaining the morale and the physical efficiency of a people.

When a culture has become thoroughly adapted to such highly specialized conditions, the removal of these facts may have ruinous effects, unless effective substitutes take their place. For their removal causes people to lose interest in their work and the zest is taken out of their lives. They seek relief from *ennui* in violence, dissipation, and debauchery. To the forbidding of head-hunting has been ascribed the main cause of the depopulation which has been proceeding in Melanesia since the advent of European civilization.

> In stopping the practice of head-hunting the rulers from an alien culture were abolishing an institution which had its roots in the religion of the people and spread its branches throughout nearly every aspect of their culture, and by this action they deprived the people of the greater part of their interest in life, while at the same time they undermined the religion of the people without any attempt to put another in its place.[2]

The effects appear in an increased death rate and a decreased birth rate, and especially in the prevalence of abortion. A practice which, before the coming of the Europeans, was resorted to chiefly to hide illegitimacy, has become an instrument of racial suicide. Owing to the destruction of their social and religious institutions, the Melanesians and Polynesians have lost interest in life and have become subjected to morbid influences. These have disastrous effects on the health of a people whose physique is so easily influenced by pathological mental states.

---

[1] Rivers, *Psychology and Ethnology*, pp. 145–6.

[2] *Essays on the Depopulation of Melanesia*, p. 102.

The native, making up his mind to die, forces his body to keep pace with his mental pessimism, and dies. This death-disease, as potent as it is intangible, is the dramatic protest of the islander against civilization and against the sudden dislocation of his pristine methods of life—and yet, by its very nature, the protest avails nought.[1]

The intense alertness which maintained the energy of these people in heathen days has been lost. A Fijian woman summed up the evil consequences of the Pax Britannica in the words: "We no longer fear to neglect."[2] Similar effects from the abolition of apparently deleterious institutions were experienced in British Columbia when the Government, shocked by the waste involved in the *Potlach*, abolished the practice. The result was that the production of wealth was reduced to a minimum. In the Pacific the only parts which have been maintaining their population have been those, on the one hand, where the native populations have been strong and fierce enough to withstand European penetration, and, on the other hand, those parts where the genuine adoption of European institutions has given the natives a new interest in life.[3] Nor are primitive peoples unique in this respect. It seems that even in the Western World to-day a militant nationalism is the only force strong enough to save Europeans from a sensuous materialism which will, if unchecked, soon lead to their extinction.

---

[1] Roberts, *op. cit.*, pp. 74–5.

[2] Roberts, *op. cit.*, p. 136.

[3] *Essays on the Depopulation of Melanesia*, Ch. VIII; Roberts, *op. cit.*, p. 142.

CHAPTER III

TECHNIQUE

TECHNIQUE is a system of means to attain certain ends. It is the outcome of man's dexterity of hand and versatility of brain, factors which contributed mutually to each other's development. For if the work of the hand is but the tangible expression of thought, it was on the other hand no doubt the freeing of the arms and hands from locomotor use, and their employment to grasp and present things to the eye, which not merely helped to acquaint man's ancestors with their first weapons and tools, but which contributed in producing the essentially human form of brain.[1] It was the development of these powers of thought and action which enabled men to utilize effectively the resources of their environment and to overcome their more specialized adversaries.

The evolution of this technique was a slow and laborious process. Primitive man is an inventor neither by disposition nor by training. His mind has less material to work on; there are fewer objects, situations, or processes between which the mind can perceive relationships and which can be utilized for the educing of correlates. He is besides generally too occupied with the exigencies of making an existence to be interested in phenomena apart from their immediate utilization. Further, as the mind, according to Spearman,[2] acts as if it disposes of a fixed amount of general energy and that energy is at least partly under the control of the will, specialization and the attitude towards innovation must be of predominant importance in the development of technique. Primitive inventions and discoveries, however, were the casual by-products of man's daily activities. The directional search for the unobtrusive is a recent development. The arts and crafts are, especially among the lower primitives, part of the daily work of the women, and are regarded with contempt by the men. Their ideas and interests do not run in that direction. Economic development, therefore, is dependent on the more imitative and less original sex. Emotionally too the savage favours conservation rather than change, imitation rather than the introduction of novelties. Perhaps the most fundamental distinction between savage society and modern Western civilization is this difference in attitude; the passive acceptance of the given order of things on the one hand, and, on the other, the belief in technical progress and the deliberate striving to create and to utilize new inventions to secure material improvement.

---

[1] "Brain," *Encyclopaedia Britannica.*

[2] Spearman, *Creative Mind*, Chs. III and IV.

In the development of primitive technique the more passive mental processes of observation, appreciation, and imitation played a relatively important part. It is these functions which are exercised especially in discovery. The essential conditions for making discoveries are that the opportunities for making them must exist. The environment must present the opportunity. The opportunities must also be observed and appreciated. This is more likely to happen if the phenomena present themselves continuously and obtrusively, and if the population is sedentary and has sufficient leisure to be interested in facts for themselves. Thus, according to Nordenskiöld, the discoveries and inventions made independently by the American Indians belong to the agricultural tribes rather than to those living by hunting and fishing. Further,

> it is mostly where the Indians have been prosperous that one meets with a large proportion of inventions and discoveries. I am afraid it is not always true that necessity is the mother of invention. If it were true, then inventions ought to have been made in places where the struggle for existence was very hard. But instead they are made where conditions of life are easy.[1]

[1] Nordenskiöld, *op. cit.*, p. 284.

Discovery is usually distinguished from invention. Discovery is the recognition of the advantages of something already in existence independently of the discoverer. Invention, on the other hand, is the conception and creation of something new that would not have existed but for the inventor. In practice it would usually be difficult to distinguish between the two. Many inventions, in fact, may be classed as applied discoveries. They are produced accidentally, in playful activity, or from aesthetic or religious motives, with effects quite different to those intended. Thus metals may have been accidentally reduced in camp fires. Tin was perhaps added to copper to increase the resemblance of the metal to gold, the effect being to produce a kind of bronze. Many industrial objects no doubt originated as toys. The origin of a number of agricultural practices—the sowing of seed, the spreading of manure, the domestication of animals, and the use of the plough—has been ascribed to religious motives. There is, however, still a very big difference between the accidental production of an act, its appreciation, and its intelligent reproduction. Thus, according to the story of Charles Lamb, the roasting of meat in China was first discovered accidentally by the burning down of a house which led to the death of several small pigs. To produce a similar fortunate effect the owner repeatedly burnt down his home when his sow had given birth to a litter, until in this way the good news spread to the other inhabitants of the Middle Kingdom. The important fact is therefore not merely that discoveries were made, but that they were appreciated and reproduced deliberately and more or less intelligently.

Primeval man, not knowing where he was going, could naturally not have taken thought and deliberately set about conceiving the objects which were to satisfy his needs. Specific needs, in fact, are rather aroused by accidental discoveries. The inventive faculty applied in the development of most artifacts was no doubt very small. Sometimes, indeed, great changes were made at one leap in the structure, form, or function of an object.

Such must have been the case, for example, when the elasticity of wood was applied to making a bow, or the stone knife was hafted. These inventions have been called "free mutations" by Dr. Harrison. Sometimes a complete change is brought about by the union of two devices which had hitherto been developing along separate lines. Examples of such a cross-fertilization of ideas are the application of the wheel to the making of pottery and the invention of the plough. For the plough represents the combination of the hoe, or the digging stick, and animal traction, brought about perhaps by the union of agriculturists and herdsmen. These Dr. Harrison refers to as "cross-mutations." In the development of most complicated artifacts, however, the inventive faculty seems to have been only marginally applied. They can, in fact, be explained as the end result of a series of minute variations, many of which may have been unintentional, and even imperceptible, but the final effect of which was to produce complicated and individualized entities.[1]

Such variations can be brought about in several ways. It is the nature of an unspecialized and imperfect technique that there are numerous fluctuations round the standard form or composition. Such random fluctuations must sometimes, especially where a given variation is undoubtedly an improvement and is often accidentally repeated, have suggested a deliberate act of selection. The adoption in turn of each of a number of slight advantageous changes may ultimately result in the creation of a new product. Thus the pestle and mortar would easily develop from the continuous use for pounding of two flat stones, the smaller becoming rounded off and the larger hollowed out. Such a process develops an entirely new object without directional thought intended to increase the efficiency of the means to attain a given end. Sometimes the act of selection was more deliberate and intelligent, as when the triangular dagger grew into a short dirk, then a rapier, and eventually into a cut-and-thrust sword. Such a process comes nearer to rational research. That the conscious process of selection was rare, however, is shown by the extreme slowness of inventive progress.[1]

---

[1] Harrison, *Man*, Vol. 26, Nos. 74, 101; Vol. 27, No. 28.

The use of new raw materials may also have important effects on the form and function of objects. Primitive inventions seem often to have taken the form of the substitution of one kind of material for another, and especially of the use of an artificial substance to displace a product presented in nature. Thus the gourd and the shell undoubtedly influenced the development of basketry and of earthenware. Such substitutions of material are sometimes brought about by a change of environment. The potentialities of the new material are usually not appreciated at once, and objects made of it are initially merely copies of those made in the older substance, both with regard to form and the details of ornamentation. Thus the first copper tools closely resembled their stone predecessors, the earliest pottery was often made in the form of baskets, leather bags, or natural containers. The first stone temples in Egypt were merely copies in limestone of primitive houses and temples of reeds, clay, and mud bricks. Soon, however, the qualities of the new material force themselves on the attention of the craftsman. The plastic quality of clay or the malleability of metals enables forms to be produced which are less unwieldy, more graceful, more efficient, and less wasteful than copies of the older forms. Similarly with other materials. Thus it has been maintained that the Greek temple represents a highly idealized and stylized expression of the pole dwelling, stone pillars displacing the former wooden supports. The ornamental effect of the stone column was so striking that the former house dwindled to a purely ornamental superstructure. The use of different materials therefore everywhere tends to initiate new series of developments.[2]

Sometimes new forms arise through the transfer of variational products that had developed in one medium to a quite different material. Thus the edge and the point were transferred to numerous tools. The handle no doubt developed first in basketry, and was then transferred to pottery. The ornamentation of some clay handles still represent the original woven material.

---

[1] Harrison, *op. cit.*; Childe, *The Bronze Age*, p. 54.

[2] Sayce, *Primitive Arts and Crafts*, Ch. IV.

The use to which objects are put exercises an important influence on their form and structure. Thus the simple bronze blade developed into a sword, a spear, or a halberd, according to the way it was hafted and utilized. The simple archer's bow developed into a series of instruments which found their ultimate expression in the harp, the piano, and the violin, according to whether the sounds were produced by twanging, by striking the strings, or by sawing them with a smaller bow.[1] The utilization of an object may also not only necessitate the construction of a number of auxiliary appliances, but the attention focussed on it may suggest its use for other purposes as well. Thus the use of the horse for riding not only led to the invention of the necessary trappings, but suggested its utilization for transport and for agriculture. In this way trait complexes arise.

On the other hand, the influence of function in determining the structure of an object is reflected in convergence. For the possible forms which an object can take are limited by the functions it has to perform. An oar, for example, may conceivably be made in many shapes and sizes. In actual fact the conditions of its use prescribe the size, form, and material to be employed. Initially very different objects were used, but they all converged to the common wooden oar, which is much the same all over the world. The same applies to pottery, to boats, and to numerous other objects. In each case the range of variation is limited by the requirements of effective use to certain fairly well-defined forms and materials, discovered by trial and error during the course of their utilization.[2]

---

[1] Sayce, *op. cit.*, Ch. IV.

[2] Cf. Goldenweiser, *History, Psychology and Culture*, pp. 45–7.

When a new invention is made the technique is rapidly perfected, then a relative stability appears, and finally complete stagnation sets in, unless a new series of inventions are made to jerk the process out of its accumulated inertia. The process has been brilliantly described by Dr. Frankfort.[1]

> Every new art has a short period of intense life during which it develops and expands until the climax is reached. The primitive stage in which the struggle with the material supersedes all other considerations is soon passed through in the élan of the newly awakened creative enthusiasm; some clumsiness is still discernible, and also lack of experience which betrays itself in experiments attempting the impossible; impetuosity is combined with love and care, appearing in all details. Then, for a very short time, the best is done which is at all possible in that line, with full mastery of motives and material the fullest inspiration blossoms out. Beyond this nothing can be done. Inevitably doomed, inspiration weakens. Henceforward there is long and slow degradation with its routine, with its heartless dull designs, which become more and more debased and confused; with its occasional reactions which simulate revival. This process may continue for ages out of sheer inertia, till some force from outside eventually crushes it out of existence.

In the course of its evolution each article reached, or passed through, one or more clearly marked stages which Dr. Harrison calls "expression points." Such a stage is reached when an object attains a definite form or composition, in which phase it may either stagnate permanently, or pass by a new series of variations, or by a mutation, into a completely new object. Thus the digging stick and the hoe, whatever their form of composition, represent definite stages in the development of agricultural tools. Among most people these implements have remained at this stage. But among others, no doubt through the meeting of cultivators with herdsmen, they developed into the plough. As early man could not know what he was trying to invent, he naturally would not direct variational changes so as to lead to new articles, and thus evade remaining stationary and stagnant.

---

[1] Frankfort, *Studies in the Early Pottery of the Near East*, Vol. I, pp. 19–20.

> One people arrived at the saddle-quern and could get no further, another got on a line that led to the rotary quern, and ultimately to the windmill; one "invented" tied cloth, but the true loom was not on that line; one specialized in chipping flint, and had to be taught how to shape stone by friction.

Some of these expression points were too specialized to lead to any further development by the process of variation, and they were so efficient for the purpose which they served, that they effectively barred the introduction of competing appliances with a greater future. Numerous are the examples where primitive man in this way arrived at dead-ends.[1]

Technical development is therefore not a self-generating process. Primitive technique, in fact, is based essentially on observation, appreciation, and imitation, none of which are progressive factors. Discovery and variation were the chief processes involved in the development of the arts and crafts. Discoveries were spasmodic, and took the form mostly of the exploration of the obtrusive facts presented by nature. Variations were the casual by-products of primitive man's daily activities. Deliberate experiment, though rare, is not unknown in savage society. Thus the South American Indians are said to test their flora systematically to find out the plants that will best narcotize fish.[2] But on the whole directional research is a recent development.

The development of primitive technique is further hindered by the fact that technical knowledge is not objective, in the sense of being embodied in scientific principles, but is the subjective knowledge of a master or mistress of the craft, who hands it down personally to relatives and apprentices. Such knowledge is of course purely empirical, for the savage can have no notion of the chemical changes or mechanical processes involved in his work. It is knowledge the validity of which has been demonstrated by experience. The work is therefore done according to traditional rules of thumb. Methods are referred more to the precedents which they copy than to the ends which they try to attain. Under such conditions custom easily crystallizes practice into stereotyped forms which kill all forms of spontaneity and originality. As the object of the primitive craftsman, according to Goldenweiser, is

---

[1] Harrison, *op. cit.*

[2] Lowie, *op. cit.*, p. 43.

> not to know, but to do, not to understand, but to achieve, the realm of the matter-of-fact becomes a happy hunting ground for the pragmatist, not an abode for the pursuer of the "idle curiosity." There is satisfaction when the thing works, and, barring accidents, no further changes are made. Henceforth, the mind accepts these condensed depositories of reason traditionally. They become part of the technical equipment of behaviour, not of thought and understanding.[1]

The development of the arts and crafts in savage society is also hampered by the fact that these are, as a rule, exercised not as specialized vocations, but as part of the domestic work of women. When they are carried on as specialized occupations they are subject to various valuations, either of esteem or of contempt. Almost invariably the exercise of the crafts is connected with mystical associations. From such attitudes there follows the organization of the crafts in fraternities or guilds, their exclusiveness and professional jealousy. Particular callings become hereditary in families or castes. These consider themselves the special carriers and defenders of a system or tradition which has to be jealously guarded against corruption. Initiation ordeals have to be passed to acquire the art and the magic necessary for correct performance. This exclusiveness has often led to the degeneration and even to the complete loss of useful arts.

Objects made under such conditions are in a significant sense the expression of the craftsman's personality, and obtain an emotional, personal significance. The imperfect methods and means applied gives the worker but an imperfect control over his material. It is largely a matter of chance and of the personal element involved whether the work will be a success or not. Such an attitude and such a technique form the correct background for the association of the results with magical notions. It appears to the savage that the outcome is controlled by supernatural powers, and that the exercises of a correct ritual is as essential as the use of the correct technique.

---

[1] Goldenweiser, *Early Civilization*, pp. 406–7.

The magical method most often used to bring about the event desired is that of prompting, of setting an example by analogy, of the act desired. By thus demonstrating the process it is believed that changes in the course of events are initiated. The practice of magic is therefore dominated by the sympathetic principle that like produces like, that nature can be stimulated, just as human beings can be coaxed into imitation, by the setting of an example; that occult influences can be imparted by contagion. Thus the hunter inflicts wounds on the effigy of his prey. The public magician makes rain by sprinkling water or by producing cloud effects, and creates dry weather by avoiding water and by resorting to warmth and fire to dry up the too abundant moisture. The Trobriander puts a dry banana peel on a heavy tree trunk to facilitate its transport. The Zulu, buying cattle, chews a bit of wood to soften the hard heart of the seller.

It is even considered necessary to manipulate the immediate surroundings of the new-born babe so as to transfer to it the qualities desired by the group. These qualities can be imparted by suggestion, or by mere contact. Thus among the Hopi Indians the infant is introduced immediately after birth to the tools and the technique which it will use in later life. The midwife either goes through the whole process before the infant, or the implements are hung on the cradle or put in its hand, where the mother helps to retain them for a few moments. Thus is imparted at the first possible opportunity the qualities in which it is desired that the infant shall excel in later life. As the essence of a person's personality is considered to inhere in certain parts of the body, such as the hair, the blood, and especially the umbilical cord, these excuviae must be subjected to appropriate treatment. The effect is the same as if it were done to the individual himself. Hence the various ways in which the umbilical cord is manipulated. In the Marshall Islands, if the child is a boy, the navel-end is thrown into the sea that he may become a good fisherman; if a girl, it is hidden in a pandamus-tree, which has many leaves, so that she may develop a liking for plaiting these leaves. The umbilical cord of the Polynesian girl was cut on the board on which the native cloth was beaten out, so that she should become industrious. In Ponape, it was wrapped in a mussel and hung on a tree, in the hope that the child would become dexterous in climbing.[1]

For the exercise of the more difficult crafts, and especially of iron smelting, it is considered essential that the workmen should be ritually pure. The workmen may be chosen according to principles which have nothing to do with a rational technique. Those may be eliminated who have eaten pork during the year or whose wives are suspected of *légèreté*. The Nyamwezi smith, during the process of smelting, may not bath, nor may he have relations with women or eat honey, spices, and salt.[2] The Bambala iron workers during the time of smelting are in a state of strict tabu. They may not enter their own homes, nor may their wives, who stay in the village, wash or anoint themselves, or wear ornaments which might attract the attention of men. They are in the same state as recently bereaved widows.[3]

The primitive craftsman is greatly hampered by the inadequacy of the technical means at his disposal. His tools are few, simple, and to a large extent unspecialized, both in function and in form. The workman has to rely largely on the force of his muscles and the dexterity of his hands, on hard work and much patience. The time taken to produce an object is correspondingly long. The construction of a large canoe or a public building often takes years, and needs the co-operation of a large part of the community.

---

[1] Miller, *op. cit.*, Ch. VI.

[2] Stuhlmann, *Handwerk und Industrie in Ostafrika*, p. 56.

[3] Smith and Dale, *The Ila-Speaking Peoples of Northern Rhodesia*, Vol. II, p. 203.

The effects of such a technique is usually an ineffective and low yield. Without effective means of controlling his operations, and the failure often to apply even those which he has, the results of complicated work, such as iron smelting or the building of a canoe, are left largely to chance. Yet in spite of his ineffective methods and tools, the work of the primitive craftsman is often of the finest quality. Thus the best basketry ever made was constructed by the women of California, who stood on a very low level of culture. Beautiful wooden carvings are made with nothing more than stone implements. The vessels of the Polynesians, made from sewn planks shaped with stone and shell tools, covered hundreds of miles of stormy ocean. The elaborate stone buildings of the Mayas were made without the help of metal implements. Even the Pyramids of Egypt, with their huge, sharply cut and finely polished hewn stone of hard syenite, were built at a time when the only tools were those of stone and copper, or at best a bronze with a very low tin content. The largeness of conception and the perfection of execution of these works become the more remarkable when the inadequacy of the technical aids are borne in mind.[1]

The evolution of industrial technique, crude and laborious as it was, nevertheless had important social effects. Each addition to the technical knowledge of a people enables greater powers of observation and comparison, more acute powers of analysis, the more subtle understanding of causal relations, and a greater ability of educing correlates. Each new invention breaks in on the stability of the world of the primitive and helps to destroy his belief in the inevitability of things. The

[1] "Bronzezeit," *Reallexikon der Vorgeschichte.*

development of technique ensures a measure of leisure necessary for cultural progress. Sometimes this leads to effeminacy. But generally those groups which are the most enterprising and the most ready to adopt technical novelties obtain political preponderance. This stratification affords the aristocracy the leisure for cultivating knowledge for its own sake, and confers on the professions a prestige which draws to them the best ability.

CHAPTER IV

THE FOOD QUEST

THE life of primeval man must have been a never-ending struggle for existence against the forces of nature, against hunger, disease, the elements, carnivorous animals, and even against his own fellow men. Weaker than many of his opponents, more sensitive, and slower, his condition in the lowest stages of culture is not an enviable one. But he is relatively intelligent and, according to civilized criteria, is not fastidious. Some of the lower hunting and collecting peoples are in the true sense of the word omnivorous. There is practically nothing in the animal and vegetable world which they will not devour. Even unpalatable and poisonous plants, such as wild garlic, the core of aloes, and the gum of acacias, are sometimes consumed. Squeamishness, however, is not a civilized prerogative. Thus the Eskimos, who love decomposed meat and eggs half-hatched, and use their cooking utensils as chamber-pots and urine as soap, will not eat plants which flourish near manure, or touch pork, because they have observed the dirty habits of the animal in European households.[1]

Although the lower primitives are, on the whole, omnivorous, some modern hunters and collectors have become highly specialized in their food supply. The bison hunters of the Western Plains, the reindeer hunters of northern Asia, the fishing populations of British Columbia, and the acorn-eating Central Californians were all largely dependent on a single staple. In spite of the radical differences between different peoples, the diet of each hunting and collecting community is often extremely monotonous. Thus the Eskimos and the

---

[1] Hintze, *Geographie und Geschichte der Ernährung*, pp. 110–11.

Plains Indians lived largely on meat. The aborigines of British Columbia and of the east coast of Siberia lived almost entirely on fish. Some of the Columbian natives had a definite aversion to meat. Peoples like the Semang, the Californians, and the Paiute, on the other hand, lived very largely on a vegetable diet, although they do not approach vegetarianism nearly as much as some of the higher primitives, or some of the rice-planting peoples of east Asia. Pure hunting and pure collecting peoples are unknown. The Eskimos approach the former, the Semang the latter, most nearly.[1]

The food supply of a hunting and collecting people depends on the character of its environment and the development of its technique. In the favoured spots where the sago palm grows wild and salmon abound, an abundant if simple sustenance can be obtained by a purely acquisitive economy. But such places are rare. The food supply of the modern hunter and collector is usually both poor and precarious. But then from the earliest times their predecessors have been losers in the struggle for existence, and have slowly been pushed out of the places best suited for their mode of existence.

As women are weaker and more restricted in their movements than men on account of the care of the family, the work of collecting falls largely to them. It is a work admirably suited to their abilities. For it requires little skill, and in most environments involves little danger and excitement, only patience and strenuous effort. Roots, fruit, and seed are the main sources of sustenance. Fruit, however, can be gathered during part of the year only. Roots are more sustaining, and keep relatively well. Nuts and seed are sometimes gathered in comparative bulk and stored for future use. Among some collecting peoples the women even take precautions to secure the future supply by reinserting shoots and by weeding and even irrigating useful plants.

Hunting, on the other hand, is a male prerogative. The work is both more strenuous and more dangerous

[1] Forde, *Habitat, Economy and Society*, pp. 80, 311–12.

than collecting. With primitive weapons hunting is often a test of endurance, the prey being chased ceaselessly for days till it succumbs to wounds, poison, or exhaustion. The hunter then has to carry it home laboriously on his back. Young and pregnant animals especially are pursued, where possible over unfavourable territory. The predominance among palaeolithic remains of female and young animals shows that it was especially these which fell victims to the primitive weapons of early man. It is with such methods of hunting that the dog, and later the horse, proved of inestimable value. The introduction of the horse into America, especially, enabled the Plains Indians to catch up with the bison and to herd them into pounds where they could be easily destroyed. It so greatly increased the means of subsistence that a number of sedentary tribes were induced to revert to a hunting mode of existence.

The lower hunter is often as much the hunted as the hunter. He avoids and dreads carnivores. Early palaeolithic man in Europe, especially, must have wandered warily about the country with one eye on the game and the other on his no less numerous enemies. For not only did he have very slender means of defence, but the carnivores of the time were even more formidable than those of to-day. Slowly during the course of the Palaeolithic Period the position of man in Europe improved. His weapons became more efficient. Spear throwers and bows and arrows were invented. The highly specialized and dangerous kinds of animals slowly disappeared; exterminated not by human but by natural agencies. All those methods came into use which are the stock-in-trade of the modern hunter.

Hunting is often carried on with an elaborate technique which shows great powers of planned action and of co-operative effort. The most effective method used by hunters, both prehistoric and modern, consists of organized drives. The animals are scared and driven into narrow ravines, over steep cliffs, into swamps or into pounds and V-shaped hedges fitted with pitfalls, where, wounded and exhausted, they can be easily dispatched. Some of the fences found in South Africa are remarkably long, and represent the labour of successive generations.[1] The ability for organization, for leadership, and for discipline, displayed in the drives of the higher hunters, shows powers of collective effort remarkable for people at this level of culture.

Fishing is usually carried on in conjunction with hunting, but sometimes as a highly specialized profession. The technique varies from the simple individual occupations of angling, spearing, or the even more primitive catch by hand, to the collective operations of netting or whaling in which whole fleets of canoes may be engaged. A very widely distributed, if not very wholesome, method of capturing fish is by poisoning. Poison, in fact, is not only universal in distribution, but seems to be a speciality of the lower primitives. The Australians are acquainted with no less than twenty-two different species of plants which provide the necessary material.[2] South American Indians are said to experiment systematically with their flora to find out the plants which will best narcotize the fish.[3] The Nootkas of British Columbia, on the other hand, restock streams which are becoming depleted of salmon with spawn obtained from other rivers during the breeding season. In this way they start a new generation in the depleted stream.[4]

With the exception of a few favoured places the food supply of the collector, the hunter, and the fisherman is both poor and precarious. Famine is common, especially in winter and during long periods of drought. It keeps the population within reasonable numbers. The loin-cloth, seen in pictures of prehistoric men and worn by many modern hunters, is often tightened across an empty stomach. The habit of eking out the food supply by eating earth is widely distributed on all the continents. Sometimes, however, it is also considered a delicacy, or is eaten for religious or medicinal reasons.[1] The life of the hunter is either a feast or a famine, his powers of endurance being as remarkable as his digestive faculties. Wrangel gives the following description of the privations of the Yukaghir in north-eastern Siberia, even during the summer hunting season[2]:

---

[1] Stow, *The Native Races of South Africa*, p. 90.

[2] *Man*, 1903–51.

[3] Lowie, *op. cit.*, p. 43.

[4] Forde, *op. cit.*, p. 28.

> Summer had arrived, but the reindeer had not yet come. It is difficult to imagine the extent to which hunger prevails among the aborigines, whose existence depends primarily on chance. Even in the middle of summer people often begin to feed on the bark of trees and on skins which have hitherto served them as bedding and clothing. A reindeer caught by chance is divided among all, and is eaten up in the full sense of the word. All, even the internal organs and the crushed bones, are used, because one has to have something to fill the empty, tormenting stomach.
>
> During our stay here the coming of the reindeer was the only subject of conversation. Finally, on September 12th, to the joy and relief of the aborigines, there appeared on the right bank of the river a countless herd of reindeer, which covered all the hills along the shore. Everyone came to life. From all sides the aborigines pressed toward the river in the hope of ending their sufferings by a successful hunt. Glad anticipation shone in all faces, and everything promised abundant game. But to the horror of all the grievous word suddenly spread that the reindeer were leaving. And in truth we saw that the entire herd, no doubt frightened by the crowd of hunters, left the banks and disappeared in the mountains. Desperation replaced the joyful hope. One's heart was torn by the sight of the people suddenly deprived of all means of maintaining their miserable existence. The universal grief and desperation were heartrending. Women and children moaned, wringing their hands, others fell to the ground and with howls dug into the snow as if preparing graves for themselves. Fathers of families remained silent, immovable, gazing at the hills where their last hope had disappeared.

On the whole, it is among the more specialized peoples, where an elaborate technique and social organization have been developed to exploit the main source of food supply, and the abundance of the staple makes possible a relatively sedentary life, that the highest forms of a purely acquisitive economy have been attained. Most of the lower hunters and collectors are notoriously improvident. Among some of the higher hunting and fishing peoples, a relatively sedentary life and cold winters both enable and necessitate the storage of considerable quantities of food. Even among such peoples, however, the failure of the staple at the accustomed time may reduce the population to dire straits.

---

[1] Hintze, *op. cit.*, pp. 325–9.

[2] Quoted by Huntington, *The Character of Races*, p. 66.

As the food supply of the primitive is usually precarious and the effects of what he consumes are often uncertain, eating is for him a serious affair, both from a practical and an emotional point of view. Among the Bergdama there is a food-master who has to taste dishes before they are eaten. If he is not affected the others know that they too can eat the food. If he dies the kraal loses nothing, for he is usually an old man who has to be fed, but no longer contributes to his upkeep. A very large number of tabus have reference to food, laying down what can and what cannot be eaten and the way of eating things. The main effect of these restrictions among hunters and collectors is to further restrict their already limited resources. The preparation of food is everywhere connected with ritual and magic, and these associations increase rather than decrease among the higher primitives. Even in civilized societies meals are usually begun with a religious invocation and ended with thanksgiving, thus imparting to it the character of a religious ceremony. The staples are everywhere regarded with religious reference. Even oaks which yield the unwholesome acorn staple were regarded as holy by both the Germans and the Greeks.[1]

It is a remarkable fact that most of the durable food used to-day in different parts of the world developed from plants that were originally indigestible, bitter, or even poisonous. Such tubers and seeds have to undergo various preliminary processes; they have to be washed, dried, beaten up, or stacked before they are fit for consumption. Thus the much-valued manioc of South America is poisonous. The wild potato is insipid and bitter. In Peru to this day it is subjected to an elaborate and laborious preparation before it is consumed, a procedure that was no doubt originally necessary to remove the distasteful qualities. The potato and the tomato are closely related to the very poisonous belladonna, celery and carrots to hemlock. The wild yams, which form the staple food of the Semang, contain poisonous juices. These are removed by the yams being first soaked in water, then rasped, squeezed, and finally dried over a fire. Others are pounded to pulp, mixed with ashes or lime, and steamed. The Paiute leached the tannin from their acorn staple by pouring hot water over the meal spread in piles on the sand.

---

[1] Briffault, *op. cit.*, Vol. II, p. 440; Thurnwald, *Economics in Primitive Communities*, Part I, Ch. III.

The fact that so many originally unpalatable plants became the staple articles of food may be due to these plants being discarded and lying about the settlement for considerable periods. After the lapse of time experience would show that a change had taken place in their character.[1] Nordenskiöld has suggested that the bitter manioc was originally used as a fish-narcotic, and by chance it was discovered that what remained after the poison has been washed out had food value. The fact that leaching is used for the removal of so many kinds of poison suggests that the value of more poisonous plants may originally have been discovered in this way. It points to the fact that primitive man did not instinctively avoid injurious food.

From a very early age the savage tried to lend piquancy to a stale and monotonous diet by the use of condiments. Of these salt, honey, and spices are the oldest. Salt is a necessary constituent of the human body. The potassium salts contained in food, and especially in vegetable food, produce a lack of sodium chloride in the organism. This accounts for the fact that hunting peoples who live largely on meat are either ignorant of or indifferent to salt, while vegetarians show an irrepressible longing for this indispensable article.[1] The use of salt is emblematic of hospitality, and blood-friendship is strengthened by eating it together.[2] Honey was from early times used as a preservative of meat and as an intoxicant, and bees' nests represented one of the earliest forms of private property. Spices are valued as condiments, stimulants, preservatives, and for their medicinal properties. How highly they are prized by barbarians can be judged from the fact that Alaric's ransom of Rome is said to have been three thousand pounds of pepper.[3]

---

[1] "Wirtschaft A," *Reallexikon der Vorgeschichte*.

Intoxicants and narcotics are almost as old as man himself, and are universal in their distribution. Not a single primitive people is known who do not possess the means of occasionally exalting themselves above the sordid exigencies of ordinary mundane existence, especially on occasions of feasts or friendly gatherings. The Australians chew the twigs of the pituri bush. Many South American Indians take cocaine on their expeditions as a stimulant. They acquire a remarkable tolerance for the drug, which enables them to go several days without sleep, food, or drink.

Tobacco was cultivated by American Indians who otherwise knew nothing of agriculture. The object of smoking was often to produce visions. "The Indians believed that it had the power to increase virility; the warriors who had several wives used it freely, while unmarried ones either partook of it sparingly, or not at all." Children in Borneo begin to smoke "long before they shed their milk-teeth." The use of opium, hashish, and betel pepper is both old and widely distributed. The gift of a betel-nut is among many peoples given in confirmation of a pledge and in token of affection. "A man proposes by asking a girl for a chew, and bride and groom chew in common." In the Arctic regions the poison of the fly agaric is swallowed. The lengths to which men will go to get the much-desired toxic effects is shown by the abominable practices associated with the use of this fungus among some Siberian peoples.[1]

---

[1] Cannon, *The Wisdom of the Body*, p. 96.

[2] Sumner and Keller, *op. cit.*, Vol. III, pp. 2076–8.

[3] Sumner and Keller, *op. cit.*, Vol. III, pp. 2078–9.

Fermented drinks are prepared from numerous plant, and even animal, products. Mead, palmwine, and pulque are by far the easiest to prepare, and were no doubt the discovery of nomadic peoples. Watered honey if left to stand for a while ferments and produces a slightly intoxicating drink. Its use is widely distributed. Pre-Hellenic and Hindu gods are described as "drunk with honey." The Israelites, like true Nomads, set out to find honey and discovered wine. During the marriage ceremonies of northern Europe which lasted a month the beakers filled with mead were freely circulated, so that the first month of married life came to be referred to as the *honigmond*, the honeymoon. In hot climates the sap of the palm ferments within a few hours. Hartwick enumerated no less than thirty-one kinds of palms utilized for the purpose. The preparation of pulque, the national drink of the Mexicans, is similar. Fifteen different kinds of agaves are tapped for making alcohol. The enormous consumption of the drink is said to account for the "degeneration" of the Mexicans.

The technique involved in the preparation of the other drinks is a little more complicated, and these were no doubt invented by sedentary peoples, with the exception of kumis and kefir, made from the fermented milk of animals, which are the drinks of Asiatic and European pastoralists. Primitive fermented beverages can be divided into wines and beers. Agricultural peoples have brewed beer from almost every kind of grain, besides several kinds of tubers. A selection was then, in the course of time, made of the best. Vases, showing the remains of beer and mead, have been found in prehistoric graves, even in those of women. Bread and beer were the food of the common people of Egypt, the hieroglyphic for a meal consisting of a loaf of bread and a pot of beer. There were frequent complaints of excessive indulgence and of the beery odour, especially of the scribes. The grape seems to be a native of Asia Minor. The Egyptians as early as 2550 B.C. boasted that in their expeditions into Asia they had destroyed fig-trees and vineyards. According to Sinube, there was more wine than water in the land of Jaa. The Phoenicians disseminated the grape throughout the Mediterranean. The Homeric heroes were already wine drinkers. Like the French of to-day, they affected to despise the barbarians who drank drinks prepared from grain. Some Siberian and African peoples even understand the technique of distillation, although they seem to have acquired the art from their more civilized neighbours.[1]

---

[1] Weule, *Chemische Technologie der Naturvölker*, p. 55; Sumner and Keller, *op. cit.*, Vol. III, pp. 2080–90; "Rausch," *Reallexikon der Vorgeschichte.*

Narcotics and intoxicants are associated in primitive society with divine attributes. The moon, as the source of moisture and of vegetation, is especially connected with the sap of plants, which are regarded as the life-blood of the luminary. The drinking of fermented beverages is therefore often considered a necessary preliminary to the acquisition of divine inspiration. The cult and ritual of soma occupy an important place in ancient Vedic religion. A whole book of the Rig-Veda is devoted to it. Among the peoples of northern and western Europe beer was regarded in much the same manner. Fermented beverages also played an important part in the religious ceremonies of the American Indians. According to the Mexicans, the agave was the first plant created by God. The symptoms of intoxication are regarded as a state of inspiration and ecstasy imparted by the divine essence. In western Asia wine was even regarded as the very blood of the deity.[2]

In the preparation of his food fire has been of inestimable help to man. Some savages do not dislike raw food. The Eskimos obtained their name from the habit of eating raw meat. Roasted meat, however, is not only more digestible, but as the carbonized crust becomes salty it is also more palatable, and lasts longer. Where neither pottery nor stone vessels are known, as is the case among practically all hunters and collectors, most of the food is simply roasted on the coals. Many primitive peoples are acquainted also with the art of baking in ovens or holes in the ground. The Semang do their cooking in tubes of green bamboo, which withstand the flames long enough to cook the food. Before the invention of ceramics it seems to have been a very widely distributed practice to cook by dropping heated stones into the liquid contained in plaited, wooden, or skin containers. Examples of stone-boiling have been recorded from all the continents. In parts of Ireland milk was boiled by this method as late as the seventeenth century, and it is still in use in some Basque villages in the Pyrenees. Stone-boiling has certain disadvantages. The Indians of the north-west coast of America often had their front teeth worn to the gums, a fact ascribed to the loosened particles from the stone which mix with the food.[1]

---

[1] Articles: "Wein," "Bier," and "Rausch," *Reallexikon der Vorgeschichte*.

[2] Briffault, *op. cit.*, Vol. III, pp. 133–4.

The art of making fire was one of man's earliest inventions. It seems already to have been known to Peking and Neanderthal Man. Fires kindled by natural agencies, in chipping stones, or by shaping wooden tools by friction might have been observed. The perception of the possibilities of domesticating and utilizing it, however, still remained. A number of primitive peoples, when first discovered, are said to have kept a fire alive continuously, and if it went out in one camp they obtained it from another place.[2]

Even where the art of generating fire is known it is usually a long and laborious process. Care is therefore taken to prevent it from becoming extinct. Live fires are carried even on expeditions. This is a common practice among hunters and collectors, and was perpetuated for ritual reasons in civilized societies. The Spartan kings were always accompanied on their wars by a fire-carrier, so that throughout the expedition all fires could be lighted from one obtained from the home hearth. The Persians and the Vikings did the same. Even in sedentary societies the fire is always maintained on the hearth. The Yule log was common in parts of Germany till recent times. Borrowing fire in the early morning was a popular, though dangerous, makeshift in western Europe as late as the nineteenth century. Many a conflagration among the thatched roofs and wooden houses was due to the practice.[1]

---

[1] Heilborn, *Allgemeine Völkerkunde*, Vol. I, pp. 29–30.

[2] Sumner and Keller, *op. cit.*, Vol. I, p. 193.

The preparation of food was not the only aid rendered to mankind by fire. It brightens the night and spreads warmth, and made possible the habitation of the colder, healthier, and more invigorating regions. It frightens wild animals from the camp, spreads security, privacy, and sociability. The hearth fire therefore becomes the centre of the home. It symbolizes the life of generations. In India the newly wedded pair formerly "brought to their own home a portion of the sacred fire which witnessed their union, and which, when once kindled on their own family hearth, had to be maintained ever afterwards for use in all domestic ceremonies and sacrifices, including the last sacrifice of all, the final burning of their own bodies at death." In ancient Rome "Vesta was the flame, the life of the home, the fire which burned on the domestic altar; it was the centre of the family, the symbol of its perpetuity." Among the Greeks the fire of the mother city was carried to the new colonies.

Fire also enabled man to change the shape and the composition of things. With its help he dug his first mines, fired his pottery, and smelted the metals. It helped him to harden his tools, excavate his canoes, to clean and manure the soil. Fire especially was of great help to man in softening his food and making it more digestible. This contributed, no doubt, towards lowering the death rate during the critical period of infancy. It meant also a freeing of energy for other than purely assimilative processes. With the invention of fire, in fact, there began that process of domestication which had such important cultural and physical effects on the human race. No wonder that so valuable a possession obtained a ritual significance. With fire the gods are worshipped and the dead interred. It is itself a spirit, or the abode of a spirit. It purifies and consecrates the home. It secures prosperity for the household and fertility to the fields. The kindling of a new fire drives away evil spirits. European peasants still believe that the kindling of need-fires, made by rubbing two sticks together, will save their lands from cattle pests.[1]

---

[1] Lippert, *The Evolution of Culture*, Ch. III.

Hunting and collecting societies had therefore already taken the first fundamental steps in the development of human culture. If nevertheless their cultures are characterized by a great stability, it is because the nomadic life of small scattered communities is not conducive to social development. A wandering life inhibits the accumulation of resources and of new inventions. A small scattered population prevents contact and cultural stimulation. The exigencies of their existence encourage a feeling of dependence and subservience to the forces of nature. Hunting and fishing by themselves, however, are stimulating professions, both mentally and physically. They produce a mental alertness, presence of mind, coolness, and strategy which are usually not found in the more sedentary occupations. The powers of observation of the hunter, and especially his ability of following trails, are remarkable. According to the Hottentots, the Bushmen had their eyes, not in their heads, but in their feet.[2] The intervals of leisure between the great exertions of the hunt give the hunter the opportunity of materializing his observations into aesthetic expression.

The freedom of a wild nomadic life is not easily given up by the hunter. On account of their savage and indomitable character, and their contempt for all forms of domesticated life, the Bushmen were regarded by their neighbours as little more than animals. Civilized peoples easily revert to a nomadic existence. The original transition to the sedentary pursuits of agriculture must therefore have been both difficult and slow. The process was no doubt marked by a number of transition stages, and in the economic life of the higher primitives hunting, fishing, and collecting still play an important, though auxiliary, part.

---

[1] Sumner and Keller, *op. cit.*, Vol. I, pp. 200–1; Heilborn, *op. cit.*, Vol. I, p. 23.

[2] Stow, *op. cit.*, p. 81.

CHAPTER V

AGRICULTURE

For far the greatest part of his existence on earth man roamed about as a hunter and collector. Then towards the end of the Palaeolithic Period changes began to set in, changes which were at first hardly distinguishable from the methods of a purely acquisitive economy, but which in the end were to be of fundamental importance in the development of mankind. From perhaps as early as about 15000 B.C. men slowly learned to cultivate plants, from perhaps 10000 B.C. to domesticate animals. From the combined utilization of both these practices there evolved the peasant economies and plough cultures which make their appearance from the Indus to the Nile in the fifth millennium B.C.[1]

As agriculture developed by the domestication of wild plants, the transition could naturally have been effected only where the wild species were to be found. It is, however, no easy matter to locate the original home of modern cultivated plants on account of the many modifications in structure produced by the process of domestication. Thus the wild ancestral form of neither maize nor wheat has been definitely determined. It is now generally believed, however, that the former was derived from teosinte, a wild grain growing in parts of Mexico, and that the latter can be traced to certain wild grains of western Asia.

The cultivated food plants fall into two main divisions, tubers and grains. The great domestic cereals of the world are wheat, rye, barley, oats, maize, rice, and millet. All civilized societies have been largely dependent on one or more of these grains. There are, on the other hand, many primitive agricultural communities, especially in the tropics, who live exclusively on roots and are ignorant of grain.

---

[1] Menghin, *Weltgeschichte der Steinzeit*, pp. 113 sq., 200 sq., 270 sq.

The technique of cultivating grains and tubers, and even of the different grains, has little in common. Cereals have to be sown, whereas many roots will grow if a part is inserted in the ground. Their domestication therefore no doubt occurred independently of one another. If the idea of cultivation was transferred from one plant to the other, the adaptation involved in the process was so great that it, in fact, amounted to a new invention.

That the idea of cultivation originated independently in America is shown by the fact that all the plants cultivated in the two continents before the arrival of the Europeans were of native origin. The great majority of the plants cultivated by the Indians, besides, were of tropical or sub-tropical origin, and must therefore in the first instance have been discovered in Central or in tropical South America. The discoveries contributed by the Indians north of Mexico were inconsiderable. So thoroughly did the Indians exploit their native resources that the Europeans have, during the course of four hundred years, not added a single important contribution.[1]

When a plant has once become domesticated, its cultivation may spread by diffusion wherever climatic conditions permit. Owing to the difficulties which modern hunters and collectors experience in passing from a nomadic to an agricultural mode of existence, even under favourable conditions, it has generally been assumed that the diffusion of agriculture was originally accomplished mainly by the migration of peoples. Agriculture leads to the relatively rapid increase in population so that the surplus would migrate periodically to seek new lands. But when once the habit of cultivation has been acquired, the introduction of an improved plant may spread rapidly over large areas by culture contact. This is shown by the geographical distribution of wheat and rice in the Old World, and especially by the distribution of maize both in the New and in the Old World.[1]

---

[1] Nordenskiöld, *op. cit.*, pp. 277–80.

The transition from collecting to agriculture was no doubt the result of a long process of evolution, the end effect of a series of variations, in which the different stages would hardly be distinguishable. Numerous transitional forms are to be found among modern collectors. Thus the Besisi (Jakun) of the Malay Peninsula are said originally to have been in the habit of eating the fruits of the jungle in a small shelter built upon the spot where they were gathered. When it was pointed out that this practice led to a superfluous number of fruit-trees growing in the same place, the whole tribe took to carrying their fruit a little distance before eating it, and afterwards removed during the fruit season to a fresh spot each year, in order to spread the seed over large areas.[2] The Paiute collectors, in order to stimulate the growth of wild bulbous plants, laboriously cut ditches to irrigate patches of their arid country from the streams flowing down the Sierra Nevada. Some of the Australian natives not merely protect useful plants, but reinsert the heads of the wild yams which they dig out. Some of the Indian tribes living around the Great Lakes merely collected the wild rice growing in those regions, but the Ojibwas also sowed the grain in places where it had not hitherto grown. The Hadendoa lived during the nineteenth century as nomadic herdsmen in the Sudan. But they also maintained more or less permanent villages within reach of the Nile to which they migrated in force during the late summer. Here they strewed millet seeds on the wet mud left by the recent inundation and awaited the harvest. This no doubt presents a picture of the sort of agriculture carried on by the first farmers of Egypt.[3] At a much later date, according to Herodotus, the Egyptians used to drive flocks of pigs on the land to trample in the seed which they sowed in the mud.[4]

---

[1] "Primitive Agriculture," *Encyclopaedia of the Social Sciences.*

[2] Skeat and Blagden, *Pagan Races of the Malay Peninsula,* Vol. I, p. 338.

[3] Childe, *New Light on the Most Ancient East,* p. 51.

[4] Herodotus, II, 14.

Agriculture seems to have developed both from the practice of grubbing for roots and from the habit of carrying home the more edible specimens of plants. Many of these selected products would remain around the hearth and flourish on the refuse collected in such places. Especially plants found to be unpalatable would be thus discarded. It is a remarkable fact that most of the leguminous staples of to-day, in all parts of the world, were originally bitter or even poisonous, and required elaborate methods of preparation to make them edible. A more or less select number of plants would thus come to grow around the sites of camping places. These plants, the ruderals, which require salts and nitrogen, and therefore flourish in refuse, are at the same time the useful plants, and seem to be the predecessors of the present cultivated ones.[1] Among savages to this day roots and even grains are commonly planted in mounds, a practice no doubt derived from the fact that the earliest cultivated plants were those which grew on man's rubbish heaps.

As primitive cultivation is inseparably connected with ritual, it has been suggested that magic may have played an important part in the origin and development of agriculture. Frazer points out that among the Kaitish, a tribe of North Central Australia, when the wild seed begins to grow some of the seed is put in the headman's mouth, who blows it in all directions. The idea is to make the grass grow plentifully everywhere. Similarly, powdered gypsum is blown about to represent clouds, and to make the rain fall. There is therefore no intention of sowing grain. For the idea is merely an application of the general principle of sympathetic magic that things can be increased by scattering about objects which resemble them. Such seed would tend to grow. Frazer suggests that the natives, observing this, may afterwards come to adopt what had at first been a magical ceremony to the needs of a practical system of cultivation. "May not this, or something like it, have been in more advanced communities the real origin of agriculture?"[1] Similarly it has been suggested by Eduard Hahn that ploughing was originally a religious act, interpreting the fertilization of the earth by an implement representing the male organ of generation. The Babylonian plough had a seeding funnel attached immediately behind the share so that the seed fell into the opened furrow. It was a common custom in the ancient East for the first ploughing to be done by the king, who was regarded as the embodiment of the country's fertility.[2]

---

[1] "Wirtschaft A," "Kulturpflanze," *Reallexikon der Vorgeschichte.*

The agricultural methods used by primitive peoples have everywhere remained very rudimentary. The pointed stick which is used by the collector for digging up the roots serves also the agriculturist for laying in the shoots. The digging stick has, however, also been at least partially displaced by variations such as the dibble, the spade, and the hoe.

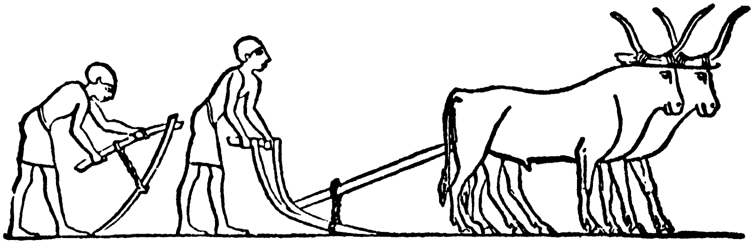
The digging stick and the dibble are used everywhere outside the Old World area of the iron hoe. In several places it developed into a more efficient instrument. The Pueblos, for example, used a crotched stick so that extra pressure could be exerted by the foot. The Maori obtained the same effect by tying a piece of wood transversely to the main pole. The point was sometimes widened to increase its power of shifting soil, and the wooden edge was shod with, or displaced by, a metal blade. Instruments of this type are found not only in Asia and America, but have remained in use in parts of Europe. That the plough may originally have developed from such an implement is suggested by representations of prehistoric Swedish, as well as some early Egyptian and some modern Asiatic and European ploughs.

The hoe is widely distributed over Europe, Africa, and Asia, and is also used, though less extensively, in Oceania and America. In parts of Switzerland there are men to this day who see a plough for the first time when they are called up to do military service. The most primitive form of the hoe consists of a piece of wood with a projecting branch cut short and pointed to serve as a blade. Such a "hack" was in use in parts of Sweden till

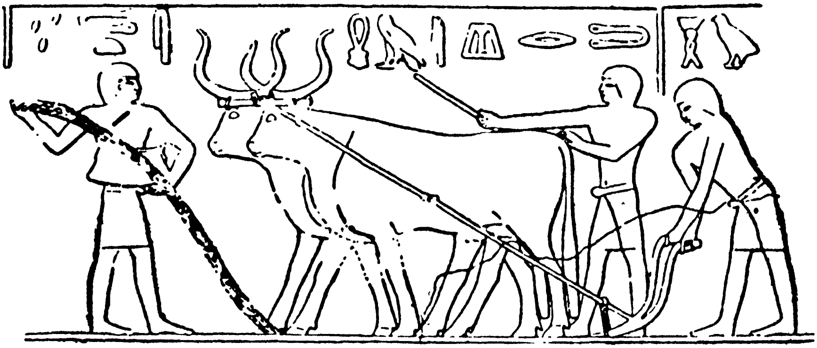
---

[1] Frazer, *Totemism and Exogamy*, I, pp. 217–18.

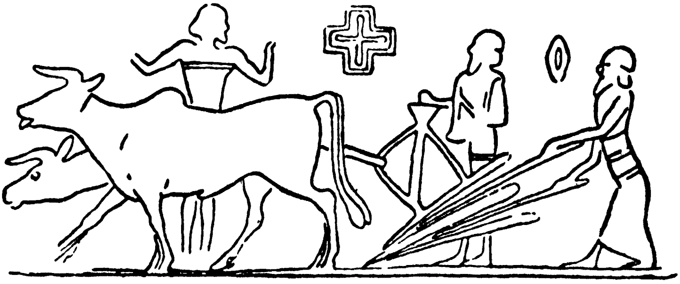
[2] "Wirtschaft A," *Reallexikon der Vorgeschichte*.



Egyptian Hoe and Plough



Egyptian Ploughing and Sowing Scene



Mesopotamian Sowing-plough

a few generations ago. At a very early age, however, the wooden blade was also displaced by flint, and widened so as to increase its power of shifting soil. Later the flint was displaced by metal. The Egyptians used a peculiar hoe, consisting of a blade of curved wood, three to four feet long, and running to a sharpened point. This was connected to a shorter perforated handle at a very steep angle, and was prevented from coming loose by the use of a tie which ran from the lower part of the handle to the middle of the blade. It must have been a much more unwieldy implement than the short, broad-bladed iron hoe used by modern cultivators in Africa and Asia. But it is important in the evolution of agricultural implements in that it seems to have been the direct predecessor of the plough, at least in Egypt. Early Dynastic representations of both the hoe and the plough suggest that the latter is a direct modification of the former. The handle is extended and becomes the beam. To the blade is attached two handles for pressing the implement in the ground. The shape of the blade, the angle of the blade to the handle, and the rope tie between them, are all preserved. The earliest representations of this kind of plough precede in Egypt those of the previously mentioned "push-plough" type by about fifteen hundred years.

The transition from the hoe to the plough, in fact, is easy, and seems to have been effected independently in several parts of the world. It merely requires that the hoe, instead of being used for hewing, should be dragged, and that a handle be added by means of which the instrument can be guided from behind. This would suggest itself in loose, sandy soil. Livingstone describes a South African hoe with two handles in the same horizontal plane, the implement being dragged through the surface soil by two women in the manner of a plough.[1] Tylor describes the transition from the hoe to the plough in Sweden as follows[2]:—

> Swedish tradition records the steps by which agriculture improved. The wooden hack was made heavier and dragged by men through the ground, thus ploughing a furrow in the simplest way; then the implement was made in two pieces, with a handle for the ploughman and a pole for the men to drag by, the share was shod

---

[1] Livingstone, *Travels in South Africa*, p. 442.

[2] Tylor, *Anthropology*, p. 217.

with an iron point, and at last a pair of cows or mares were yoked on instead of the men. This seems nearly the way in which, thousands of years earlier, the hoe first passed into the plough.

The most difficult work in primitive agriculture is usually that of clearing the soil. For the ground which is fit for cultivation is usually, in its natural state, covered with a luxuriant vegetation, and in the tropics with dense jungle. There is thus only one alternative: either to clear away the wild growth and to use the fertile soil thus freed, or to give an artificial fertility to less fertile soil. Both methods have been adopted.

In the arduous task of clearing the soil man is greatly aided by the use of fire. In the preparation of forest land the undergrowth and the smaller trees alone may be uprooted. These are allowed to dry and are then fired. By this means the larger trees are also killed, and only their charred trunks remain behind. Sometimes the larger trees are killed in advance by skinning off the bark. Or all the large trees may be notched on the same side. One large tree on the edge of the area is then felled, knocking down the trees adjacent to it, and these in turn bringing down the rest. These are then allowed to dry for several months before a fire is applied. In the Congo about a third of the trees, and by preference the loftiest, are left to stand so as to protect the plantation from the direct rays of the sun. The soil is then either left as it is, or to a certain extent broken up before planting begins.

The clearing of ground is a fairly regularly recurring work. For most savages practise migratory agriculture. The rapid change of the cultivated area may be due to the partial exhaustion of the soil owing to the continuous planting of the same crop without deep tilling. The Hopi prevented this by wide spacing. As the soil is not properly aerated by cultivation there will besides be a rapid accumulation of toxic bacteria. The most usual cause, however, is that grass takes possession of the cultivated ground. As plenty of free land is generally available, especially in the tropical cultivation of tubers which require a relatively restricted area, there are as a rule no barriers to the movement of the cultivated fields and settlements.

As the clearing of land with stone axes is an arduous task, primitive agriculturists often prefer to cultivate relatively poor soil, or to increase the fertility of land which can be easily controlled. One of these expedients is to put a layer of fertile soil on land that is naturally sterile, and therefore free from dense vegetation. The repeated additions of new soil cause artificial hillocks or mounds to arise. In Paraguay ancient mounds are still used by the Indians to grow akuri palms.[1] In Peru, on the other hand, the reverse method was used. The upper layers of sand was removed until the moist soil was reached below.

The easiest, if by no means the most obvious, method of enriching the soil is by the addition of fertilizers. As new plantations are usually cleared by fire, the cultivator here unconsciously works with a well-prepared soil. In the case of regularly inundated areas the floods bring in enough silt to restore the fertility of the ground. The Indians of New England manured their soil with shells and fish. The Peruvians used the guano on the islands off their coast, the product being distributed according to fixed rules among the coast provinces and among the landholders. Experience no doubt showed the keepers of domesticated animals that manure promotes the growth of plants, for it is used in several widely separated areas. As all sorts of magical charms are attributed to excrements by primitive peoples, it has also been suggested that these may originally have been put on the fields as life-givers and purifiers.[2] The effect is that the animal, the plant, and the soil come to form an interdependent cycle in the conservation and use of the energy of the sun in the production and destruction of organic matter.

Irrigation in some places is older than cultivation. Among the higher primitives it reaches remarkable proportions, considering their inadequate tools. The Pueblos, in the arable track of the Salado alone, controlled the watering of at least 250,000 acres. The outlines of 150 miles of main irrigating ditches can be traced. Terraces are often laid out to facilitate irrigation. They are found in many parts of the world, and seems formerly to have been even more common. This method of cultivation was highly developed in ancient Peru. An enormous amount of human labour was expended on building the walls to make the terraces, on filling them with suitable soil, and in constructing the canals to supply these with water. Some of the aqueducts were supported on high masonry, others were hewn out of the mountain-side, some were covered channels, others tunnels carrying the water through solid rock. And all this was done with nothing better than copper, and perhaps bronze, tools.[1]

---

[1] Schmidt, *The Primitive Races of Mankind*, pp. 108–9.

[2] Hogart, *The Progress of Man*, p. 113.

The reaping of the harvest, in the case of cereals, is done either with knives, each ear being cut separately, or with sickles. Flint sickles with serrated edges have been found in the Fayum settlements of Egypt. From the enlarged sickle developed the scythe. Reaping is, however, not essential for the gathering of grain. The wild-grass seed of the Californian Indians and the wild rice around the Great Lakes were collected by threshing the growing grain. The Sema Nagas of Assam strip the growing heads of rice and millet by hand, while the American Indians snapped off the maize cobs with their fingers.[2]

Threshing is done either by beating the grain with a stick, or by letting men or animals tread out the seeds on a hardened floor. The grain is then ground between stones or pounded in wooden mortars. The grinding of corn no doubt preceded its cultivation. Some Australian peoples to this day annually reap thousands of acres of panicum which they grind into meal, although they do not cultivate the cereal. Crude methods of grinding often leave whole grains, as well as pieces of stone, in the flour. Cakes baked from such meal played havoc with the teeth of the ancient Egyptians, as they still do with those of many Negro peoples. Mummies often show the crowns of teeth worn away, with the consequent formation of abscesses and caries.[1] The flour was no doubt originally eaten dry, as was done by the American Indians till recent times. In the form of broth or bread, both leavened and unleavened, it became the staple food of a large part of the world.

---

[1] Schmidt, *op. cit.*. p. 111.

[2] *The Evolution of the Domestic Arts,* Horniman Museum, Part I, p. 20.

Magic plays an essential part in primitive agriculture. Nothing is said to have surprised the Pueblo Indians more than to see the Europeans plant corn without performing religious ceremonies. The fact that the crop grew, nevertheless, contributed more to their conversion than all the missionary efforts of the padres. The performance of these magical ceremonies is the special function of the women, whose fertility is likened to that of the earth. These rites vary from the sprinkling of "medicine" over the fields and dancing to acts of sexual licence, often of revolting obscenity. For it is a belief universal in the lower phases of culture that the divine generative power, which produces the fertility of nature, is stimulated by such acts. These ideas and practices persisted in a modified form in the civilizations of antiquity, and remnants are found among the peoples of Europe to this day.[2] The Olympic games, as well as all the modern games of ball, such as cricket and football, seem to have originated, not from a desire of diversion or to promote physical culture, but as magical practices intended to assist the recovery of the moon.[3] As in all primitive thought the moon is identified with the earth, and is therefore considered as the producer of vegetable life, these games are sometimes practised as agricultural rites. Thus the Hopi used to play "hockey" matches with a ball filled with seeds, the spilling of which ensured a good harvest.

[1] Hintze, *op. cit.*, pp. 3–4.

[2] Briffault, *op. cit.*, Vol. III, pp. 2–16, 196–209.

[3] Briffault, *op. cit.*, Vol. II, p. 749.

The product obtained by the crude methods of primitive agriculture is generally not very big, although it varies considerably with the climate, soil, and technique of different regions. The methods vary from a purely nomadic culture to the stage where people use draught animals, plough, irrigate and manure the soil, and use a rude rotation of crops. Even when the same technique is used there are often great differences in the skill and attention applied to cultivation. Thus the care bestowed on the crops in forest Africa and in Polynesia is generally lacking in equatorial South America and in parts of Melanesia. Even more marked is the distinction between the root and fruit cultivators of tropical forests and the grain-growing peoples of the Savannah. In Central Africa the former is usually associated with a less efficient female culture, the latter with more efficient male cultivation.[1]

The difficulties of cultivation in the tropics are especially great. Except for the few favoured spots where fresh volcanic soil is to be found, the soil is generally poor, because it has been so thoroughly weathered and leached that it has lost much of its plant food. It tends to become sour through the accumulation of bacteria, and the cultivated land has to be frequently changed. With the exception of rice the food is not very sustaining, and is generally of a perishable nature. The foods which can be kept are preserved with difficulty against numerous pests. As tropical fruits and roots are continuously coming to fruition, however, their storage is generally not necessary. The fields are planted either simultaneously or in rapid succession with a number of different plants, which are removed individually when needed, and are immediately replaced. Such fields differ in appearance from the long-drawn-out plots, sown with a single staple, which are characteristic of plough culture all over the world.

But even in temperate climates the conditions are not much better. Where the rainfall is big the ground in its natural state is covered with dense forest. The felling of trees, however, is a laborious process, and as the soil deteriorates rapidly with primitive means of cultivation, clearing is a regularly recurring work. The Savannahs are difficult to cultivate without deep ploughing, except where the grass is tufty. Primitive agriculture has therefore succeeded best in semi-arid regions, where inundations occur periodically, or where the means of irrigation can be easily constructed.

---

[1] Forde, *op. cit.*, pp. 171–2, 380–1.

With the introduction of the plough and the use of draught animals much larger areas could be worked. The plough was especially advantageous in the cultivation of cereals, and cereal production gives a bigger reward than any other form of agriculture. Its cultivation is less laborious than that of roots, the food value is considerably greater for a given quantity, and it can be easily stored for long periods. The surplus product can therefore be preserved to protect the population against future crop failures. The introduction of the plough thus made possible a rapid increase in population. Its introduction was especially beneficial in temperate climates, as it enabled the sod to be broken up and made permanent agriculture on the same lands possible. To the absence of the plough in America must be ascribed to a large extent the retarded development of the New World as compared with the Old.

The beginnings of agriculture, rudimentary as they no doubt were, nevertheless had important cultural effects. Not that primitive agriculturists form a uniform cultural group. Between the lowest and the highest cultivators there is, in fact, a very great distinction. The social arrangements of the lower cultivators are even in many ways inferior to those of the higher hunters. But whereas a developed social organization among a collecting people is due to specially favourable circumstances, it is a fairly normal growth in agricultural societies. Agricultural communities therefore have far greater inherent potentialities, and have progressed further than those dependent on a purely acquisitive economy. Highly developed cultures have all been typically agricultural, and no high stage of civilization has been reached except on an agricultural basis.

The more favourable conditions of life and of reproduction in agricultural societies made possible an increase in the density of population. The more sedentary life led to the development of new industrial arts, such as pottery and weaving, and to improvements in architecture. Everywhere in the world the existence of numerous industries coincides with the practice of agriculture. Works of pure art, on the other hand, at first degenerated, no doubt on account of the more stolid and less imaginative work. But the world of ideas, both magical and empirical, increased greatly. Agriculture had important effects on character. It developed habits of prevoyance, of planning ahead, and of steady application. It developed the habit of storing food and seed for future use. This necessitated the construction of adequate buildings and containing vessels. It made necessary a better reckoning of time, a closer observation of the course of the seasons or the stars. Thus began the rudiments of astronomy, initially no doubt largely the work of women. The more favourable position of the woman gave her greater liberty in bestowing her favours, and encouraged ideas of mother right. The larger and more sedentary population needed more elaborate systems of social organization. From every aspect, therefore, there appeared new conditions of life which demanded new ways of adaptation.[1]

The social revolution due to the introduction of the plough was even greater. The introduction of cattle into agriculture marked the turning-point of the transfer of agricultural labours from the women to the men. For the handling of cattle is their special prerogative. Contact with women may have injurious effects on the animals as it has on the other possessions of the men. Land now obtained considerable economic value. For with short fallow periods and the rotation of crops, the same land could be maintained in cultivation indefinitely. The yield besides is considerably larger than that necessary to feed the people who till the soil. The private ownership of land therefore becomes an important economic asset. The work also is intermittent in character, leaving a large part of the year free for other activities. The surplus accruing to the landowners and the kings created a leisured class, and led to a demand for the services of craftsmen and of officials. This had important effects on the growth of science, of ordered government, of economic specialization, and social differentiation. It laid the foundation in the Old World for the appearance of the Archaic Civilizations.

---

[1] "Soziale Entwickelung," *Reallexikon der Vorgeschichte.*

CHAPTER VI

THE DOMESTICATION OF ANIMALS

THE domestication of animals could have been effected in several ways. It could have developed firstly by the intensification and specialization of the hunt. Through a group of hunters associating themselves with a herd of herbivores, for example, they may come to obtain a measure of control over the movement of the animals, may protect them, and thus pass almost imperceptibly to their domestication.

Among the Indians of the North American plains whole communities used formerly to pursue particular herds, pursuing them ceaselessly from one end of the prairie to the other. Before the Indians came into possession of the horse they were seldom able to catch up with the herd, but stragglers, ill or weary, lagged behind and supplied an adequate if not very ample food supply. The bison, however, is a relatively fast-moving animal, and its calves are mobile immediately after birth. It was therefore able to resist domestication. The cattle of the Eurasian and African plains, slower and impeded in their movement by calves less immediately mobile after birth, proved more tractable. The prehistoric hunters on these steppes no doubt adopted the same methods of hunting as the redskins. But being able to come into closer contact with their game, they may have succeeded in obtaining a greater measure of control over their movement. Perhaps they even succeeded in holding them during the night by lighting fires round the herd, thus affording a measure of protection to the animals. A bond thus came to be formed between men and beasts. The community became dependent on the herd which in the course of time they regarded as a possession, and their nomadic mode of existence became modified and conditioned by the care and movements of the animals.[1]

The transition, if effected in this way, would have been slow, and would have involved no violent break in existing practice. The control exercised on the instincts of the hunter, however, would have been enormous. Thus the Indians, when they obtained possession of the horse and were able to control the movements of the bison, did not domesticate, but exterminated the animal. Modern hunters have invariably experienced the greatest difficulties in becoming herdsmen, even under the most favourable conditions. Thus the Bergdama of south-west Africa, although they were in close contact with the pastoral Herero for centuries, never accumulated herds of their own. Cattle which were stolen or brought back as remuneration for service were immediately consumed. Similarly the Eskimos never domesticated the reindeer, in spite of their long and close contact with the peoples of Asia. The greatest difficulty was experienced by the Alaskan Government in persuading them to become pastoralists under the guidance of Asiatic herdsmen. For a long time the herds were neglected or slaughtered indiscriminately for food. Even hoe cultivators almost invariably neglect the few animals which they happen to possess.

It is therefore more probable that the domestication of animals proceeded in a more modest and homely way. Many primitive peoples keep the most varied animals as pets. South American forest peoples keep tame parrots, monkeys, lizards, turtles, mice, and many other kinds of quadrupeds and birds. Veritable menageries, including tame lions, elephants, and leopards, are found in parts of tropical Africa. Fowls were originally raised in Burma for divination and for cock-fighting. The Chinese bred crickets, at first to enjoy their music, then to stage cricket fights. The Ainu tame owls, which they revere for their wisdom.

Such animals are naturally not kept for economic reasons. Most of the qualities for which animals are prized to-day, in fact, only developed after their domestication. Wild sheep have wool only in winter, and then only beneath a hairy coat. The woolly fleece is the product of domestication. The wild horse, the ancestor of the riding animal *par excellence*, is too weak to carry a man for any appreciable distance. Wild female mammals have milk only when they feed their young, and have sufficient only for this purpose. Birds merely lay as many eggs as they can hatch at a time. The yielding of milk or the laying of eggs over the bigger part of the year are therefore qualities which developed by domestication. Primitive man, besides, would hardly consider such food as very palatable. The Wahuma of East Africa are nauseated by eggs, which they regard as excrement. The Chinese get sick at the idea of drinking milk. So do we, if the animal happens to be a horse or a dog instead of a cow or a goat.

---

[1] Peake, *Early Steps in Human Progress*, pp. 94–6; Thurwald, *op. cit.*, pp. 5–6

As most of the qualities for which animals are reared to-day only developed after domestication, the act must have preceded the perception of the advantages to be derived from keeping them. Both, in fact, were processes of development. Numerous animals, as Galton suggests, were no doubt kept as pets, but only those which fulfilled certain stringent conditions were fit for domestication. Some animals adapted themselves more easily to living with human beings, and were perpetuated. Domestication facilitated the survival of mutant characters. Some of these men prized and perpetuated by the process of selection. It is in this way that the yielding of milk and wool, or the laying of eggs, became intensified. Any other process of domestication would have required a degree of patience, tact, and the exercise of discretion, that are not usually associated with primitive people.

In the process of taming and utilizing animals religious motives seem to have played an important part. There is hardly a domesticated animal, not even the pig, the dog, and the cat excepted, which has not played an important part in religious practice.

On account of this, it has been maintained by Eduard Hahn that at least the older of the domesticated animals were originally tamed and introduced into the human economy, not directly for economic reasons, but from religious motives. He does not deny that when once the value of the older domesticated animals had been perceived, other animals may have been tamed with a view to their direct economic utilization. Nevertheless, his theories represent an extreme diffusionist point of view, and are so generalized as to lose much of their plausibility. It has similarly been maintained that the domestication of animals is a product of totemism. As thus formulated, these theories become scholastic rather than historical problems. By the use of more restricted and ethnologically more correct methods it can be shown that, as no trace of totemism can be found among the Asiatic nomads who seem originally to have domesticated the horse, the camel, and the reindeer, these beliefs cannot be held responsible for the domestication of these animals.[1] Similarly, when confined to one or at least a few animals, domesticated in a given area, the theories of Hahn become much more plausible. And even if they should be incorrect as interpretations of origins, they nevertheless maintain their interest as descriptions of practice.

The domestication of cattle, according to Hahn, was associated with the worship of the moon. The association of cattle with the moon cult seems to be due to the similarity that exists between their horns and the crescent. This association was especially close in the Near East. There was not a god in Semitic religion who was not assimilated to, and represented as, a bull. Yahweh was throughout the earlier times worshipped in the form of a bull. In Egypt the representation of the gods as bulls was one of the oldest practices of their religious worship.

> In the great religions in which bull-gods are most prominent, the divine bull is either expressly identified with the moon, or it

---

[1] Leroy, *Essai critique a L'Étude de L'Économie Primitive*, p. 99.

> is specially associated with those gods who are most unequivocally regarded as moon-gods. The horns of cattle and the lunar crescent are interchangeable, and the lunar disc is placed between the horns of the Apis bull or the Hathor cow as between those of the moon-crescent. The horned god, the horned moon, and the horned bull are similarly interchangeable in all Semitic pictography. The assimilation is almost equally prevalent among peoples who keep no cattle, have no agriculture, or only rudimentary cultivation, and who do not use cattle for ploughing. The North American Indians assimilated the horns of buffaloes to the crescent of the moon in the same way as did the Semites and Egyptians. They represent the disc of the full-moon between the horns of buffalo-skulls; and they describe the moon-serpent as "horned." . . . The Neo-Caledonians represent the lunar disc within a crescent with everted points, assimilated to animal horns, in the same manner as the Ancient Egyptians. The same assimilation is found in every part of the Globe. Throughout the Lake-dwellings of the bronze and early iron ages, lunar crescents are found, modelled in clay, which vary in form from regular crescents to bull's horns, and angular horns in all points to the Kretan "horns of consecration."[1]

As the primitive considers it necessary to renew the vitality of the moon to aid it in passing through its various phases, cattle were sacrificed during an eclipse. The holy cattle reserved for this purpose would be kept in enclosures where, half-free, they would reproduce themselves and become domesticated.

In the form of a holy cow the moon often suckles the king. The divine kings of the Near East were fond of comparing themselves to bulls, just as the sacred kings of the Shilluks trace their descent from a divine cow. As the calf sucks its mother, so specially privileged persons, the kings and the priests, could renew their vitality by drawing the udders of the holy cows. In the course of time the milk of holy cows came to be introduced into religious ritual, and was dispensed from the altars. As cattle also came to be kept in increasing numbers outside the holy enclosures, their milk slowly became an important source of everyday food.

In all primitive thought the moon is also identified with the earth. Everywhere the moon is considered as the producer of vegetable life. In the agricultural societies of the Old World it was worshipped as Mother Earth, which brings forth the golden corn. As the source of fertility the moon is also considered as the controller of the water and rain on which fertility depends, the process of irrigation being regarded as an act of generation. The drawing of water and the watering of the fields are considered primarily as magical functions.[1]

---

[1] Briffault, *op. cit.*, Vol. III, pp. 191–5.

According to Hahn, the economic utilization of the ox as well as the invention of the wagon and the plough originated in performing these functions. The wagon, drawn by holy cattle, was originally a ritual object, by means of which an image of the moon-goddess was carried from place to place so that the blessings of fertility could be distributed over the land. The mother earth also had to be fertilized so that the barren fields could clothe themselves with green vegetation. This was done by an implement representing the male organ of generation, through which the seeds were embedded in the soil. To this day the sowing funnel is attached to the plough in the Orient. It was a common custom in the ancient East that the first ploughing should be done by the king, who was generally regarded as the repository of the people's fertility.

As the pulling of the cult wagon in processions and in ploughing was a ritual function, the cattle used for the purpose had to be immaculate and pure. They were sanctified by castration. The product of this operation, the ox, was found to be a strong and tractable beast of burden, which could be used also for profane purposes. So the ox became everywhere the animal which draws the plough. Only in Germanic countries was it later displaced by the horse. But in these countries the horse, too, seems originally to have been used as an animal of sacrifice.[2]

The doctrines of Eduard Hahn seem plausible enough.

[1] Briffault, *op. cit.*, Vol. II, Ch. XX.

[2] "Wirtschaft A," *Reallexikon der Vorgeschichte.*

An interpretation of origins which cannot be demonstrated historically always faces the difficulty, however, that the causal sequence may have been the exact reverse. The domesticated animals and the implements utilized in cultivation may have become sanctified. This is not only possible, but even probable. For with the egocentric views of the primitive, he is likely to regard the specific herds on which his existence depends as supernatural beings and to take elaborate precautions for their safety, which would result in the most diverse forms of ritual. All herdsmen are tied to their flocks by strong emotional bonds, and do not regard them merely as objects to be economically exploited. Similarly the primitive craftsman regards the objects of his handicraft or the agriculturist his tools. Thus the most numerous objects, from the digging stick to the sword and the plough, became objects of religious veneration. It is in this way that what is felt as social and emotional needs obtain the form of religious sanctions.[1]

But whatever the motives for which animals were domesticated, the important fact is that they were domesticated and utilized for economic purposes. From the centres of domestication not merely the animals, but trait complexes, involving the methods and means of their utilization, were diffused, each recipient accepting and developing those aspects which fitted into his cultural horizon. This, as well as the fact that the various species were no doubt domesticated independently in different parts of the world, account for the great differences in the utilization of domestic animals.

These differences in utilization apply especially to the oldest of the domesticated animals. The dog is almost everywhere used as a companion of man, as a help in hunting, and as a guardian of the camp. Among many peoples, however, it is put to more specialized uses. Among herdsmen it helps to guard the flocks. In north-eastern Asia and in the Arctic regions of America it draws the sledge. On the North American plains it formerly dragged the travois. Some peoples on the Pacific coast of America used dog wool for blankets. In Mexico, the West Indies, and in parts of Africa and Asia the dog was used principally for food. In the Near East dogs and pigs served as the scavengers of the towns. Both were despised. He who wanted to show his subserviency to the Pharaoh called himself the dog of the king. The animal was, however, also considered sacred. According to Diodorus, "if a dog be found dead in a house, the whole family shave their bodies all over, and make great lamentation." The Australians and Fuegians take as much care of their dogs as of the members of their family. A Fuegian, when asked by one of Darwin's company why in times of famine they killed and ate their old women rather than their dogs, explained that the latter kill otters, whereas the former do not.[1]

---

[1] Cf. Eliot Smith in the *Universal History of the World*, Vol. I, pp. 360–3; "Wirtschaft B," *Reallexikon der Vorgeschichte*.

The pig was one of the earliest animals to be domesticated. Some peoples in New Guinea and Central Africa to this day catch young pigs and feed them in styes till they are fit to be consumed. But they do not breed the animal. Menghin suggests that the contempt of the Semites and Egyptians for the animal was due to the fact that it formed the food of the lower classes.[2] As pigs cannot be driven rapidly over long distances, they are never raised by herdsmen but are always associated with agriculturists.

Fowls are kept in Burma, the probable centre of their domestication, as well as in other parts of south-west Asia and in Africa, mainly as a means of divination. Everywhere the pugnacious character of the cock has been prized as a means of cock-fighting. The fowl was unknown in Egypt until the New Kingdom, when one of the marvels brought back from the Syrian expeditions by Thothmes III was a "bird which lays an egg each day." Some peoples of Oceania breed fowls for the feathers of the cock, which are worn as ornament. By some South American tribes they are used only as a medium of exchange.

---

[1] Darwin, *op. cit.*, p. 214.

[2] Menghin, *op. cit.*, p. 279.

The art of obtaining and of utilizing wool passed through a long process of development. The Egyptians did not use it at all before the Grecian occupation. The pastoral peoples of the African grasslands do not utilize it to this day. The Babylonians possessed heavily fleeced sheep, and used wool extensively as a raw material. The wool was plucked by hand from the living sheep, a short process of starving being applied to facilitate the loosening of the material. This method had not yet been discarded entirely in Italy at the time of Plinius, and was still in use in the Faroe Islands at the beginning of the nineteenth century.[1] Primitive peoples usually breed sheep for their meat. They are, however, also kept for their milk, and as a means of divination. In Tibet the animal is used as a beast of burden. Goats and sheep often fulfil the function of currency.

The use of cattle also is very varied. In Africa, south of the Sahara, cattle are reared for their milk and as a source of prestige. Owing to the value attached to the possession of large herds, the number is considered of more importance than the quality of the stock. The keeping of large numbers of scrub cattle is turning most of the native reserves of South Africa into deserts. In the words of a recent commission, "if the Natives will eat their cattle, it will help materially in preventing the cattle from eating out the Natives."[2] Among the Herero of south-west Africa, before the rinderpest of 1897, wealthy individuals are said to have possessed as many as ten thousand head. Among the Dinka of the Sudan the death of a good bull causes the whole community to go into mourning. A Sotho praise-song refers to cattle as "God with the wet nose." In North Africa and in south-western and central Asia milking is not confined to cattle. Horses, camels, goats, and sheep are used for the manufacture of dairy produce, and even of alcohol. The Chinese, on the other hand, will not touch milk, nor do they eat the meat of their cattle, the animals being

[1] "Wirtschaft A," *Reallexikon der Vorgeschichte.*

[2] *Report of Native Economic Commission,* 1930–2, p. 17.

used exclusively for draught purposes. In Africa cattle are, with few exceptions, never used for draught purposes. Where donkeys and camels are unknown, women and slaves serve as beasts of burden.

The ass was among the first of the draught animals to be domesticated. It was originally used in the same way and as a substitute for cattle. The animals were milked, and even used to draw both the plough and the chariot. They were used for riding in the Near East only after the introduction of the horse, although an Old Kingdom picture shows an official being transported on a seat placed on the backs of two donkeys.[1]

The horse was no doubt domesticated in central Asia. At first it was probably kept for its meat and milk and as a means of sacrifice. The Turco-Tartars to this day have the same word for food and horseflesh. Then it became more and more the riding animal *par excellence.* The horse was introduced into the civilizations of the Near East about 2000 B.C. Here it was used at first especially for drawing chariots. Its use, however, remained restricted throughout classical times.

The camel also seems first to have been domesticated in central Asia. It was known to the inhabitants of Arabia at an early date. A figure of a camel has been found in a First Dynasty tomb in Egypt, and the animal was probably used there as a beast of burden during the Middle Kingdom. It is used by desert nomads for every conceivable purpose: for transport and milking, for the consumption of its meat, and the use of its hair for clothing. Camel fights are a favourite sport with Arab and Turkish tribes. The relatives of the camel, the llama and alpaca, were the only draught animals domesticated in the New World.

In northern Eurasia the reindeer was used from early times as a beast of burden, and as a source of food and clothing. To this day Siberian peoples both breed the domesticated animals and hunt wild ones. Among some

[1] Erman-Ranke, *Aegypten und aegyptisches Leben,* p. 583.

of them the possession of a few hundred head is considered as unusual wealth.

The distribution of pastoralism is related to certain geographical conditions. "The pastoral regions range from the tundra on the one hand, through rich upland and forest margin grasslands on the other, across severely arid deserts into tropical savannas of tall grass on the equatorial margins of these deserts." The restriction of the grazing area is due even more to the possibilities of agriculture than to the limitations inherent in pastoralism itself. The large herbivores on which pastoralism mainly depends are indeed not suited to forest country. In tropical forests they suffer from disease, and the tsetse fly excludes them from large parts of tropical Africa. Even temperate forests are often devoid of good pasture. But pastoralism is also excluded from many areas well suited for grazing because agriculture represents the more intensive utilization of the land. As the knowledge of agriculture extends throughout the area where pastoralism is practised, herdsmen can occupy lands suited for cultivation only because of the prestige and military superiority attached to their mode of living. This is the case, for example, in the highlands of Kenya inhabited by the Masai. In the course of history the cultivated area has continuously increased throughout the greater part of the Old World. Even at the present time there are several areas which represent a transition from pastoralism to agriculture.[1]

No pastoral people lives on the food supplied by its herds alone. Herdsmen rely for vegetable food either on collecting, on cultivation, or on commercial and political relations with their agricultural neighbours. The need of pastoralists living in the desert or the steppe for the agricultural produce which they cannot obtain themselves has, from the earliest times, brought them in commercial and military contact with the sedentary population living in the more fertile areas. This has especially characterized the relations between herdsmen and cultivators over a large part of Asia, from Arabia to north China. In more favoured areas also, however, the pastoralist has shown an aptitude for commerce. The Frisians who bartered their coarse woollen goods seem to have been the first traders in Germany. The inhabitants of the marshlands maintained an independent shipping up to the nineteenth century. The same love of peddling was reflected in the seventeenth and eighteenth-century Tyrolese and Scotchman. The Arabs have from the earliest times been great carriers and tradesmen.[1]

---

[1] Forde, *op. cit.* pp. 395–7.

The relations between pastoralists and cultivators have, however, by no means always been on a commercial basis. The herdsman has throughout history also been a scourge to the settled populations living in his neighbourhood. He often affects a profound contempt for agricultural pursuits, a contempt which was especially pronounced among the Semites. To eat bread in the sweat of his brow was for the Semitic pastoralist the effect of a curse and the symbol of man's fall. "The divine glory," said Mahomet, " is among the shepherds; vanity and impudence among agricultural peoples." The tools of the agriculturist do not enter into the house of a nation unless Allah causes low-mindedness to enter there also. The nomads of central Asia have the same dislike for agricultural peoples as the herdsmen of Africa. To this day a Brahman will not touch a plough. "Shame enters the family with the plough," according to the Tuaregs.[2] The herdsman, however, is not unique in expressing contempt for institutions with which he is unfamiliar. The eighteenth-century landlord affected the same contempt for the tradesman, the "new kind of gentleman," who was aspiring to his exclusive political and social prerogatives.

Nor are herdsmen unique in their love for raiding their more wealthy neighbours. The Roman fortifications were directed against peoples who were very efficient cultivators, just as much as the Chinese Wall was built to keep out pastoral nomads. For everywhere poor and mobile peoples have been attracted by accumulated and vulnerable wealth. The depredations of herdsmen have, besides, been directed as often against neighbouring and weaker pastoralists as against the wealth of agricultural peoples.

---

[1] "Herdenwirtschaft," *Reallexikon der Vorgeschichte.*

[2] Briffault, *op. cit.*, Vol. III, p. 111.

Herdsmen, however, have great strategic advantages over sedentary peoples. For, from the nature of their economy, they have little to lose and much to gain by attacking agricultural communities. These find it difficult to pursue a mobile people under unfavourable conditions, and have little advantage, even if stronger, in permanently occupying their territory. Permanent fortifications, such as those of Rome and China, can be erected only at tremendous cost. Prjewalski has well described the difference between the steppe and the sown in eastern Asia, the difference between the "cold desert plateau and the warm, fertile, and well-watered plains of China," which separate two entirely different and usually hostile cultures[1]:

> Dissimilar as they are, both in mode of life and in character, they were destined by Nature to remain alien to each other, and in a state of mutual hatred. To the Chinese, a restless nomad life, full of privation, was inconceivable and despicable; the nomad looked with contempt at the life of his agricultural neighbour with all its cares and toils, and esteemed his own savage freedom the greatest happiness on earth. This is the actual source of the distinction in character between the races: the laborious Chinese, who from time immemorial has attained to a comparatively high and very peculiar civilization, always avoided war, and looked on it as the greatest misfortune; while on the other hand the active and savage inhabitant of the Mongolian desert, hardened against all physical consequences, was ever ready for raiding and reaving. If he failed he lost but little, while in the event of success he secured the wealth accumulated by the labour of several generations.

Pastoral activities develop qualities and institutions which are a great aid in securing political domination, and almost as great a source of weakness in maintaining it. The herdsman's life requires stamina and powers of endurance, the ability to make quick decisions, and a contempt for danger. The need of guarding the herds develops powers of organization which can easily be utilized for military purposes. The possession of domestic animals, and especially of the horse, gives him great mobility. When herdsmen have been united under strong leadership they have therefore usually been irresistible. But pastoralism does not develop habits of persistence and of enduring toil. Under conditions of luxury and leisure they easily degenerate. Unless they mix with the conquered agricultural peoples and become assimilated to their new conditions of life, they are inclined to neglect the details of government of the empires which they found, and these ultimately perish from neglect, maladministration, and corruption.

---

[1] Quoted in Thomas, *Source Book for Social Origins*, p. 95.

CHAPTER VII

ARTS AND CRAFTS

As a relatively large share of the energy of primitive societies is expended on acquiring the means of subsistence, industry plays a relatively less important part in their economic systems. The products of the arts and crafts can be divided broadly into two main categories: into production and consumption goods respectively.

Man's first tools naturally had a close relation to the satisfaction of his primary needs. His first raw materials were the substances of nature which surrounded him. Wood especially furnishes the primitive with most of his essential raw material, and remained the basis even of European economy till the end of the eighteenth century. It no doubt furnished prehistoric man with his first implements and weapons, as well as his first artificial shelters, and later with his first houses.[1] Over wide areas it supplied also his clothing. Bone supplied him with a substance that can be reduced to a sharp point. Shells provided scoops, vases, ladles, knives, forks, and ornaments; later they were also used as currency. In the coral islands of the Pacific the larger shells are even used as axe-heads. The tools of some modern savages show well the ingenuity of man in utilizing the natural resources at his disposal. Thus, in the islands of the Pacific, weapons are made of shark's teeth, and fish hooks of turtle shell or mother-of-pearl. In New Guinea arrow-points are made of cassowary-claws. The Semang use bamboo for every conceivable purpose, from cooking-vessels and arrow quivers to matting and knives. In Assam thin strips of the material are even used as hoes.

---

[1] Menghin, *op. cit.*, pp. 88–9.

Many of these articles survived in the stone tools which later faithfully reproduced their forms.

Stone supplied man with a material which could acquire a sharp edge, with which to cut meat or dress skins and to perfect his implements of wood and bone. Such a sharp edge is acquired especially by fracturing flint. This material, fairly widely distributed over the earth, became of tremendous value to primitive industry, the quest for which brought about the first mines and no doubt the first specialized technique. It seems to have been the object of a fairly extensive commerce in prehistoric times. To-day still over large parts of South America stones are scarce and are the objects of trade among the Indians. Even where the use of metal is known among primitive peoples, stone tools continue to play an important part in industrial technique.

Pebbles of flint or other stones are by many primitive peoples roughly shaped with a deft hit or two, used for the purpose for which they are fractured, and then discarded. Such rudimentary tools are distinguished with difficulty from the products of nature. It is, for example, still disputed whether eoliths, dating from the middle of the Pliocene Period, were human artifacts or fractured by natural means. The first artifacts which can definitely be recognized as tools shaped by human beings were obtained by chipping off pieces with a stone, used as hammer, from the sides of selected pieces of flint, until a rude cutting edge was obtained. For thousands of years this rudimentary technique was faithfully copied until a new development was introduced. Instead of merely chipping pebbles of suitable size to give them a sharp edge, the whole surface of a nodule of flint was worked until the form desired had been obtained. The edges, still rough, were then carefully retouched so as to make them regular and sharp. The implements, in consequence, became smaller, more refined, and more efficient. Later developments in the art of chipping flint made it possible to obtain long, narrow, and fine blades. Instead of relying merely on the brute force of shoulder, elbow, and wrist, the manipulation of the fingers became of more importance. Chips were no longer knocked off, but removed by pressure with a bone tool. The ancient Egyptians, and more recently the Californian aborigines, excelled in this delicate work. The art of shaping implements by polishing makes it possible to correct the errors of chipping. This technique had been applied to bone in palaeolithic times, and was no doubt transferred from it to stone. Polishing is more laborious work than chipping, requires less skill, and reduces the element of chance. So thoroughly was the new process applied, that not merely the edge of an axe or chisel was ground, but the whole surface as well. This did not increase the utility of the implements, but no doubt pleased the sense of beauty of the neolithic craftsman.

For centuries each of these quite arbitrary methods of producing stone implements were meticulously copied by craftsmen all over the world. So strong is the individuality of these crude artifacts, and so carefully were they copied, that implements of the same kind collected from the most diverse parts of the world may often easily be considered as the work of a single craftsman. Then after many centuries, by variation or mutation, a new method would originate, to be in its turn imitated for centuries. It seems a logical inference, therefore, that each of these changes was produced only once in the history of the world, and disseminated from the centre of invention all over the globe. The succession of stone artifacts in Europe has, in fact, been correlated with different waves of migration.[1] On the other hand, in the successive layers of the Bambata cave in southern Rhodesia, there have been found clearly distinguished stages varying from the mousterian to the solutrean types of implements. Small variations can be traced which led from the lower to the higher forms of implements. A diffusionist explanation would have to postulate a continuous series of migrations of peoples or cultures extending over long periods of time, and each contributing its own small variation, without causing a single break in the typological series. That these artifacts developed independently in South Africa would therefore be an explanation which seems to conform better with the facts.[1]

---

[1] Cf. Elliot Smith, *Human History*, Ch. III.

Metal plays a relatively unimportant part in primitive industry. On account of its great value, it is used for weapons and ornaments rather than for tools and implements.

Gold and copper were the first metals utilized by man. Both were known about 5000 B.C. Gold is widely distributed, and is found in a pure state, though usually in the form of small particles which have to be melted into lumps before they can be hammered. In the form of lumps gold is easily hammered cold, and retains its brilliance. But its softness makes it of no value for tools, and it is used merely as ornament.

Copper, too, is found in a pure state, although it is not now found in this form in the Near East. As it hardens with hammering, it can be reduced to a sharp edge, and the metal has therefore been of much greater importance than gold in the development of industrial technique. Over a large part of North America, and especially in the region of the Great Lakes, copper obtained in the pure state was, before the arrival of the Europeans, cold-hammered into implements and ornaments, without any knowledge of smelting, though heat seems to have been used sometimes to soften the metal. Meteoric iron was sometimes used in the same way, although to a much smaller extent. For not only is the celestial metal extremely scarce, especially in the Old World, but only detachable parts from some of the larger siderite masses and small individual pieces can be worked cold.[2] Forty-odd instances of the recent utilization of meteoric iron have been recorded. The high nickel-content of most of the early Egyptian iron suggests that it, too, was of meteoric origin.[3] The use to which metals can be put in this way may have been discovered accidentally in the search for suitable material for making stone implements.

---

[1] Sayce, *op. cit.* ,pp. 256–7.

[2] Richardson, "Iron, Prehistoric and Ancient," *American Journal of Archaeology*, October–December, 1934.

[3] Myres, in *Early Man*, p. 162.

But there is still a very big difference between the cold-hammering of metals and the discovery of smelting. The art of reducing ores could have been discovered in several ways. Elliot Smith suggests that the invention was made accidentally in Egypt in the preparation of cosmetics.[1]

> For malachite was in use as one of the ingredients of a cosmetic from the earliest known Predynastic period, definitely anterior to the knowledge of the metal copper. For hundreds of years domestic accidents must have repeatedly occurred which led to the falling of some of this cosmetic into a charcoal fire; and no doubt after innumerable instances of reduction of the copper ore by such means had obtruded themselves upon the attention of these early Egyptians, some pre-eminent genius recognized the *rationale* of the means by which the metal could be obtained from the ore.

On the other hand, it has been pointed out that the knowledge of the malachite process would be of little use to men who were dealing not with malachite, which is a carbonate, but with the pyrites of Cyprus and most of the other ancient copper-fields. A second discovery, or series of experiments, would therefore have been necessary.[2] Perhaps the metal was first reduced in camp fires built round with stones containing copper ore. Such fires would occasionally reveal runlets and lumps of copper among the ashes, as has been observed several times in native camp fires in the Katanga copper-field.[3] Ultimately it would have dawned on the mind of someone that the metal could be obtained by the process of deliberately heating such stones. It has also been suggested that the metal may have been smelted in the process of firing pottery. Or the knowledge that cold-hammered metal softens in fire may have been transferred by experiment to ores containing the metal.

Copper ore often contains impurities, and especially tin, the presence of which converts the alloy into a form of bronze. This metal is much harder than copper, and is therefore more suitable for the manufacture of arms and tools. The superiority of the new metal, when produced accidentally, would be obvious. But a long process of observation and experiment would still be required before the appreciation of a new alloy results in the detection of its causes, and to its deliberate reproduction by the suitable mixture of the component parts. Many of the so-called bronzes of antiquity were, in fact, nothing more than copper containing impurities of tin, arsenic, lead, antimony, and iron in the proportions found in natural ores. It is besides a curious fact that tin-bronze was comparatively common in Mesopotamia before 3000 B.C., but became rare after that date. This may have been due to the fact that the Sumerians had unconsciously been using a stanniferous ore, the supplies of which became exhausted or cut off. They were by then, however, deliberately trying to produce the alloy. By 2000 B.C. it had already been discovered that the addition of 10 per cent of tin yields the best bronze.[1]

---

[1] *Man*, 1916–18.

[2] Myres, *Man*, 1912, p. 100.

[3] Myres, in *Early Man*, p. 158.

It has also been suggested that both in the Old and in the New Worlds bronze may have been discovered through the intentional mixing of copper and tin in the hope of making gold. For gold has from the earliest times been valued as a life preserver, and its production has been one of the most persistent obsessions of mankind. In whatever way the alloy originated, however, the significant fact is that throughout the greater part of the Bronze Age it was manufactured by the deliberate mixing of the two metals.

Copper and bronze supplemented rather than displaced stone in the Near East. As the metals were expensive, their use was confined largely to the wealthier classes. In the army of Xerxes, as late as 490 B.C., some of the contingents were still armed with spears and arrows tipped with horn and stone. The best chipped flint arrow-heads, in fact, date from the Bronze Age. In Egypt agricultural implements continued to be made out of flint down to the New Kingdom, or nearly two thousand years after metal had become reasonably common.

---

[1] Childe, *The Bronze Age*, p. 7.

About 1000 B.C. bronze began to be displaced by iron in the manufacture of weapons and implements. Iron seems to have been first produced in Asia Minor, though Central Europe and even China have also been claimed as the countries of its origin. The metal is fairly widely distributed; although spathic, the ore best suited for the technique of the first metal industries, does not occur in the Near East. Surprise has often been expressed that such a long period elapsed between the reduction of copper and the smelting of iron. It has, however, been pointed out that copper ore, accidentally reduced in a camp fire, would yield a shining metal, whereas iron ore would at best produce a lump of uninteresting black matter, coated with slag, the value of which would be revealed only with hammering. Even if deliberate attempts were made to reduce iron ores in the copper-smelting furnaces of antiquity, the results would not have been very promising. Such attempts may have been made with ores such as haematite, which, from their weight, the workmen considered to be metallic and likely to produce copper. The furnaces, however, were merely shallow holes, lined with refractory clay, without the use of bellows to create an artificial blast. The temperatures attained in such furnaces would not be sufficient to melt the iron. Even if the experiments proved a success, which is extremely doubtful, the semi-fused mass produced would be likely to yield only one-fourth the weight of metal which would have been obtained with the same weight of copper ore, and at least twice as much fuel would have been consumed in the process. It would therefore hardly have been considered a profitable proposition.[1]

The advantages of the new metal were its relative hardness and elasticity and the abundance of the ore.

---

[1] Richardson, *op. cit.*; Burn, *Minoans, Philistines, and Greeks*, pp. 226–7; Partington, *Origins and Development of Applied Chemistry*, pp. 258–9; Stoughton, *Metallurgy of Iron and Steel*, p. 1.

Tools and weapons of bronze lose their edge and become bent more easily than those of iron. These advantages would not have been very apparent at the start, however, for iron, if not properly treated, is soft and perishes rapidly. The Celts, essentially an iron people, are said to have buried the metal until rust had consumed the softer parts. What was left was then re-smelted in order to get a harder iron. The Gallic sword of La Tene I was already so good that it was probably adopted by the Romans.[1] Yet in those areas where good ores were not available, Celtic iron was a very inferior product. According to Polybius, the Cisalpine Gauls were in 223 B.C. still using swords which had to be straightened after each stroke. Such swords were inferior to those made of bronze. Those Gauls, however, who most stubbornly resisted Caesar were all located at, or near, the best iron ores of western Europe. Thus the Belgae, the "most courageous" of the Gauls, lived near the spathic deposits along the Sieg, whereas the warlike Suebi occupied Noricum, one of the earliest centres of the iron industry. It seems logical to infer that their courage was not unconnected with the support they obtained from an efficient technique.

By the time of Homer, Greek smiths had already discovered how to harden their implements by quenching the hot metal in water, and by heating it in contact with charcoal. The early Greek iron-workers were, however, unable further to refine and toughen the metal by reheating it, as they lacked the methods of determining and of controlling temperature. The metal was rare and precious at first, and used only for ornament. In the islands of the eastern Mediterranean it was ranked in value with gold. The Greeks of Homer used it sparingly for implements, and occasionally, no doubt, as currency. Those peoples who had great difficulty in procuring the raw material considered the new metal as unlucky, and even as positively evil. There were frequent injunctions against its use in ritual, motivated, no doubt, also by the religious conservatism which sanctifies old materials and procedures. But those peoples who first became acquainted with and were able to manufacture iron implements and weapons obtained a great advantage over their neighbours. According to the Old Testament, the Philistines, in the days of King Saul, kept the Hebrews in subjection by not allowing them to have weapons of iron, or even smiths, in their country.

---

[1] Hubert, *The Rise of the Celts*, p. 87.

> Now there was no smith found throughout all the land of Israel; for the Philistines said, lest the Hebrews make them swords or spears.
>
> But all the Israelites went down to the Philistines, to sharpen every man his share, and his coulter, and his axe, and his mattock.
>
> So it came to pass, in the day of battle, that there was neither sword nor spear found in the hand of any of the people that were with Saul and Jonathan.[1]

The reduction of the ore is generally a very primitive process. Among many savages it is performed in a hollow cavity which does not differ materially from the primitive hearth. In this shallow bowl-shaped hole lined with clay a fire is kindled, and over it alternate layers of broken ore and fuel are heaped. In prehistoric Europe these hearths were often constructed on mountain-sides or on the coast, so that the prevailing winds supplied a natural draught. Among the savages of to-day, however, bellows are always used to raise additional wind on the edge of the hole. Raised furnaces, on the other hand, sometimes have no artificial blast. The metal accumulates at the bottom of the hearth. After the embers and slag are removed, tin or copper can be ladled into moulds or taken out in a solid mass. The heat of such a hearth is generally not sufficient to make iron fluid. The lumps of iron, still containing all the impurities, therefore have to be wrought by hammering and reheating. Hammers and anvils are generally of stone. Where iron hammers are used in Africa they are usually not hafted, so that they are used for stamping rather than for hammering. A piece of freshly split wood often serves as tongs. A few iron implements are, however, also found.

[1] 1 Samuel xiii. 19–22.

The results of such a primitive process are always uncertain. Excess carburization or incomplete reduction frequently spoils the product. Nor are the difficulties at an end when the metal is successfully reduced. The slag has to be removed from the mass before the product is forgeable. With primitive implements this is no easy work. Some of the dirt may be separated by cold-hammering, but the greater proportion is intimately mixed with the iron and has to be laboriously squeezed out by repeated heating and hammering. After many reheatings the bloom can be drawn into the form desired. Starting perhaps with an ore charge of three hundred pounds, the successful prehistoric or modern primitive iron worker would have produced, at the end of his laborious task, about twenty-five pounds of reasonably good iron for forging into weapons and implements. Enormous quantities of charcoal would have been consumed in the process.[1] That excellent products were often made by such crude processes attests to the special quality of the raw materials used and to the dexterity of hand of the primitive craftsman.

Mining is much older than the smelting of metals. It no doubt commenced by the open mining of outcrops in the case of flint, and by the alluvial mining of gold in the gravels deposited by rivers or floods in the case of metals. The underground mining with shafts and galleries for flint, copper, tin, and salt dates, however, from prehistoric times. Flint was mined from the earliest times, for the material found near the surface does not fracture easily, nor is it found in sizes big enough to make possible the manufacture of large instruments. The mining implements were extremely primitive, consisting of stags' antlers, wedges, and hammers and axes of stone. No wooden supports have been found, although these may have perished. Owing to the instability of chalk such supports would have been very necessary, and the repeated finds of the corpses of miners testify to the frequency of rock falls. To obviate this danger the miners immediately filled up the cavities where excavation stopped. This also saved the trouble of transporting useless material. The ore seems to have been hauled to the top in leather bags or in baskets, or to have been carried out on steps made on the side of the pit. Light was no doubt supplied by lamps burning animal fat.[1]

---

[1] Richardson, *op. cit.*

The prehistoric copper mines found in the Tyrol show a much more developed technique. As it was extremely difficult to excavate the rock with their simple tools, the miners made use of the process of alternate heating and cooling. A fire was made on the side of the shaft, which was then suddenly cooled by water being poured over the surface. The fissures made by this sudden expansion and contraction were widened by driving in wooden wedges. The loosened mass was then hewn down and the ore removed from the debris and brought to the surface. The use of mine props and the construction of adits show marked improvements over the flint mines in the use of safety devices, and no victims have been found in these copper mines. Only high-grade ore was mined. It is estimated that from 125 to 300 tons of pure copper were taken from the relatively small mine of Mitterberg alone. The whole Austrian production no doubt exceeded the local demand, and mining was probably carried on for export. These prehistoric methods remained practically unchanged till modern times.[2]

Similar methods seem formerly to have been used in Zululand for the direct reduction of copper appearing in outcrops. Seams frequently occurred in cliffs in many parts of the country. Whole regiments were set to hew trees and to pile the wood on the sides of the cliffs. The pile was then set alight and the flames fed ceaselessly for seven days. The copper, smelted by the intense heat, trickled down the side of the seam.

> It often took a whole forest to do this, but it was worth the trouble, for when the fire had died down and the ashes were scraped away, great lumps of solid copper were recovered.

[1] "Bergbau," *Reallexikon der Vorgeschichte.*

[2] *Ibid.*

Gold is said to have been produced in a similar way.[1]

Prehistoric iron mines have not been discovered in Europe. The ore is easily obtained above ground, and is often deposited in water. Like gold, the mining of iron may therefore have been alluvial.

Even where the metals are known, the tools of the primitive remain astonishingly undeveloped, inadequate, and unspecialized. The craftsman has to rely largely on the force of his muscles and the dexterity of his hands. The Melanesian, for example, has few tools besides the stone axe. In carving wood the axe is used to give a rough form to the block; the rest of the work is done with sharpened shells. With a brush made from the fibres of the coco-nut he makes the most delicate drawings. A pointed bone serves as both awl and bore. Woodwork is polished with coral and the raw hide of the shark. Very fine pottery is made with the crudest implements, such as shells for scraping and smoothing, flat sticks for pressing and palting, and stones for modelling and polishing.[2] Even where metal has been known for millennia, as in Africa, it has had remarkably little influence on the equipment of the craftsman.

The result is that the process of manufacture requires a very long time. It often took two generations to make the jade weapons of the Maori. It takes the Herero three weeks to shape a log of wood into a trough. To prevent splitting cow dung, lime, fat, and sour milk are not spared in the process. The making of buckets, spoons, and bowls from hard wood often requires a much longer time. The manufacture of four-legged stools from single pieces of wood by the Boloki takes such a long time that only the aristocracy can afford to possess them. On account of the amount of work expended on the construction of some Samoan mats, these are symbolical of the wealth and rank of their possessors. As saws, nails, and lime are lacking, primitive woodwork consists of hewing out the desired forms from single blocks of wood, rather than the piecing together of separate bits. The Eskimos, who have to rely on drift-wood, are one of the few primitive peoples who have developed the art of the joiner. The preparation and sewing together of planks are laborious processes. In the Pacific only one to three thin planks could usually be obtained from a good-sized tree of two feet in diameter, the rest being chipped away in fragments.[1] Nails fill the savage with admiration. Early European mariners in the Pacific had great difficulty in protecting the exposed parts of their craft against vandalism.

---

[1] *Sunday Times*, Transvaal, July 28, 1935.

[2] *The Evolution of the Domestic Arts*, Horniman Museum, Part II, p. 25.

Primitive objects are, nevertheless, often overladen with ornament. The amount of work embodied on an object seems in fact to be the criterion of its value. As wealth in primitive societies has a concrete form and can be embodied in relatively few objects, the elaboration of articles is a means of acquiring distinction. Such objects are not willingly sold. They represent the material expression of the skill and the personality of the maker. These are social values which stimulate the artistic temperament, lighten the work, and encourage the craftsman to perfect his technique and often to over-elaborate the objects which he tries to ornament.

That the knowledge of metal alone is not a sufficient basis for high cultural attainment is shown by a comparison of the Negro, with his age-long knowledge of iron and the first civilizations of antiquity, which had to rely on relatively soft copper tools. Thus, the pyramids of Egypt, with their sharply cut stones of hard syenite, were built at a time when the only tools were those of stone and copper, or at best a bronze with a very low tin content.[2] The elaborate stone buildings of the Mayas were made without the use of metal at all. That tools alone do not make the craftsman is also shown by the fact that the Negro, with his iron implements, remains behind the Canadian Indian with nothing more than instruments of shell, bone, and stone; and still more behind the Polynesian with his mounted shark's tooth. For whereas the Negro laboriously hewed utensils from solid pieces of wood, the Polynesians constructed boats from planks shaped with stone implements and sewn together, which covered hundreds of miles of stormy ocean.[1]

---

[1] *Travel and Transport*, Horniman Museum, p. 54.

[2] "Bronzezeit," *Reallexikon der Vorgeschichte*.

Metal tools represent the last of these production industries to be developed. The oldest of the consumption industries is no doubt the use of cosmetics. The desire for ornament is perhaps older than man himself. Köhler has shown the naïve delight that chimpanzees find in decorating themselves.[2] The amount of time and torture expended on the toilet of the savage often rivals that of the modern society woman. The desire for embellishment is usually in inverse relation to the need for clothing, and as in the animal world, it is generally more developed with the primitive male than with the female. The effect of the ornament is often to impare the efficiency of the savage, the aesthetic results to make them unnatural and unsightly, as judged by our standards of beauty.

The finery varies from a few beads to the enormous quantity of metal worn by some African peoples. The quantity usually compensates for the quality. The Giraffe-necked Padaung women of Bermuda have their necks elongated and distorted from infancy by the periodical addition of tight metal bands. The rich Herero woman staggers under iron ornaments weighing sometimes as much as thirty-five pounds. The brass leggings of her Boloki sisters may weigh as much as twenty-six kilograms. "The slow, slouchy gait enforced by the carrying of this weight is looked upon in Damaraland as peculiarly aristocratic." The poor who cannot afford the ornament, at least imitate the waddling movement of the rich. Discomfort which would otherwise be unbearable is willingly borne for the sake of beauty. Tylor records of an African belle "whose great copper rings on her limbs get so hot in the sun that an attendant carries a water-pot to sluice them down now and then."[3] A Congo queen has been described wearing a brass collar so heavy that she was compelled every now and then to recline and rest, the ornament being permanently attached to her neck. The process of tatooing may be stretched over years, and is extremely painful. If the patient is a child it is bound hand and foot, while friends relieve and drown his wailing with their songs.

---

[1] Lowie, *op. cit.*, p. 107.

[2] Köhler, *The Mentality of Apes*, pp. 95–101.

[3] Tylor, *op. cit.*, p. 243.

The absorption of so much foreign matter by the lymphatics often induces high fever; suppuration also not infrequently results from the septic manner in which the operation is performed. A funnel is used to feed a Maori chief when his face is being tattooed, for, owing to the inflammation caused by the operation, he then has to be fed on liquid food, being unable to move his jaws.[1]

As dark skins do not do justice to the colouring matter, black people scar themselves. Some African peoples adorn their lips with enormous discs measuring sometimes as much as seventy-five centimetres in circumference, and from three to five centimetres in thickness. "The woman seen at a distance and in profile, seems to be holding two saucers between her teeth." When these beauties laugh their lips cover their eyes. When the Mittu drink they have to lift the top lip with their fingers and pour the drink down their throats. Eating is very difficult, and such women are practically dumb.[2]

The hair is an object of special attention. Styles vary from the clean shaving of the scalp to enormous coiffures and artificial wigs, which rival those of eighteenth-century French women. Among the Maschukulumbe of Rhodesia the make-up of the men often attains the height of one and a half metres, with the help of the hair of their wives, whose heads are clean shaven. To build up some African coiffures takes eight to ten years. "Clay and varnish are worked into the hair to give it body and stiffness so that it can be moulded and carved." In order to preserve such constructions during the night, the top has to be tied to the rafters, and the neck rested on a wooden support. Similar supports may originally have suggested the pillow. Vermin find a safe refuge in these make-ups. The comb no doubt developed out of an instrument for scratching the head, the fingers of the hand serving as an example. The practice found among some peoples of plucking out the eyelashes, on the other hand, often produces ophthalmia and weakness of the eyes.[1]

---

[1] Sumner and Keller, *op. cit.*, Vol. III, Ch. LX.

[2] *Ibid.*

The taste in ornament is notoriously subjective. The Negro tries to extend and thicken his lips. The Australian mother flattens her children's noses by pressing in the points, or laying the baby flat on its face. Some savages artificially deform the head. The Kirghiz think that the Mongolian race "offers the most finished type of human beauty, because the bony structure of their face resembles that of a horse—the greatest masterpiece of all creation." Some admire long finger-nails, others cramped feet. Both are a sign of distinction because they imply the inability to do useful work.[2]

Fashions, finally, are as fickle in some savage as in commercialized societies.

> In Melanesia, the fashion in pipes, and all other kinds of trade, changes at different times and varies in different localities. Sometimes nothing but perfectly plain pipes are demanded; at other times they must have the representation of a ship in full sail or an anchor impressed upon them. At one time they must have a knob, at another, knobs are out of fashion; now white pipes are in fashion, and again nothing will suit but red ones. . . . To-day everyone smokes white clay pipes and the dealer is stormed with demands for white ones. Four weeks later no one wants any more of them; now all must have them brown; not one more white one does the dealer sell; if he has no brown ones, so much the worse for him. Four weeks later, again, no one wants any pipes at all; now they all run around with red umbrellas.[3]

According to Hebrew tradition, clothing originated from an innate sense of modesty. This is not borne out by ethnological facts. The practice of covering the genital organs, in fact, is not a very primitive trait in humanity. The origin of clothing was certainly not to effect that purpose. Complete nudity is found over a large part of the tropics. Among some peoples both men and women go naked, among others only the men, among still others only the women. Even outside the tropics habitual nudity is widespread, though a skin may be thrown over the shoulders for protection. Savages are often overladen with ornament, although their persons are left exposed. The natives of Peru wore shirts, but they reached down only to the navel. In former days in America Paiute couples could be seen with the man dressed only in a hat, the woman in a string of beads. Melanesians, whose bodies are completely naked, are nevertheless sophisticated enough to wear wigs. Genital coverings often, in fact, attract rather than divert the attention.

---

[1] Heilborn, *op. cit.*, Vol. I, Ch. V; Sumner and Keller, *op. cit.*

[2] *Ibid.*

[3] (Quoted) Sumner and Keller, *op. cit.*

Clothing has sometimes been adopted in response to the needs of the environment. On the whole, however, primitive peoples have been slow in using natural materials, such as the skins of animals, to protect themselves from cold. Those who have adopted it have been able to live more or less comfortably in severe climates. The variations in temperature that a normal person unaccustomed to clothes can withstand are remarkable, provided he does not wash. Savages all over the world rely largely on fire to keep them warm during the night, and the use of fire is much older than that of clothing. The Fuegians, who live in one of the most inclement parts of the world, crowd naked round the fire with chattering teeth, often sustaining serious burns. But only occasionally do they protect themselves with a small mantle, "about as large as a pocket-handkerchief," hung from the shoulder on the side the wind is blowing. Yet as an old explorer said of them, "although they are content to be naked, they are very ambitious to be fine." The elaborate garments worn by Arctic peoples, on the other hand, are intended primarily for warmth and protection. When inside their huts, however, Eskimo men and women remove all their clothing, even in the presence of strangers, putting their garments outside to get rid of the vermin. North American Indians did the same in warm weather.

The skins of animals as well as certain vegetable materials would suggest themselves as the most suitable materials for protective covering. The use of bark-cloth seems to be almost as old as that of skins. It supplied the clothing of the Aryans, the *lindwât*, from which the word "linen" is derived. It is still worn in parts of Africa, America, the East Indies, and especially in Oceania, where it is the characteristic form of clothing. Cloth superseded the other materials wherever it spread, except in the Arctic, where the climate demands furs. Leather, on account of its stiffness, is generally used only where special protection is needed, such as for footwear in the Arctic or in the jungle.

The use of clothing for warmth, however, is limited to very few peoples in primitive stages of culture. The bulk of primitive clothing consists, in fact, of ornament. Many of these ornaments seem, however, to have been worn originally as charms and amulets, either to impart certain qualities or to ward off evil, rather than as means of adornment. As the aesthetic sense is notoriously subjective, things worn for magical reasons come in the course of time to acquire a decorative value in the eyes of their possessors.

By wearing the skins of animals, the feathers of birds, or the leaves of trees, primitive people hope to acquire the qualities of the animals or plants. Barbaric Europeans not only wore the wings of hawks on their heads, but carried the bones of the birds about their bodies. Shells, on account of their origin from the life-giving waters, are valued by all savages as promoters of fertility. The cowry shell especially is highly prized, either on account of its identification with the female genital organs, or because of its resemblance to an eye, and therefore its effectiveness to ward off the evil eye. Cowry shells are worn as articles of clothing throughout the savage world to-day, and they served the same function in prehistoric times. All crystals and gems, too, are considered as possessing magic powers. Specific virtues are attributed to the various stones. Sapphires protect chastity, lapis-lazuli assures success in love, topazes bring wealth. The metals, both precious and base, are also considered as possessing magical powers. Gold especially, from its permanent brightness and incorruptibility, is considered particularly potent as an amulet. Boughs and leaves, too, are regarded as partaking of the magic properties of trees, and are widely used as charms. The fig-tree was one of the most common emblems of fertility and of reproduction in the Near East. If Eve was therefore made to resort to fig leaves, it was not to protect her modesty with the first object available, but because such dresses seem to have played an important part in agricultural rites.[1]

It is especially necessary to protect the various openings of the body through which, according to primitive belief, evil spirits and influences may enter, or the soul be drawn out or escape. Thus the savage protects his nostrils with skewers and nose-rings, his ears with ear-rings or discs attached to the lobes, his mouth by the filing or knocking out of teeth, by labrets, skewers, and even by strings of beads passed through the lips. The sexual organs, especially, have to be protected against the numerous occult dangers which threaten them. For impregnation may take place through numerous supernatural agencies such as the moon, the sun, storms, and the spirits that people the air. Pregnancy and sterility may also be brought about by witchcraft, or merely by the look of a person filled with envy or desire. Men are hardly less exposed to danger than women. The genital organs therefore have to be protected by amulets and charms. They quite commonly fulfil this function without covering the parts to be protected. A belt, a girdle worn round the abdomen, or even amulets worn in the neighbourhood of the organs are sufficient for the purpose. Ornaments, and especially bright objects such as gems, glass, or metal, are especially effective against the evil eye, not only because of their intrinsic virtues as amulets, but because they divert the attention of the onlooker to themselves. Clothing is thus affected not as a covering from innate modesty, but as a charm against occult dangers. All savages dislike being stared at. But the objection applies not only to the genital organs, but to all other parts of the body. Many primitive peoples dislike being seen with their mouths open, and have a horror of eating in common. Even Europeans cover their mouths when they yawn.[1]

---

[1] Briffault, *op. cit.*, Vol. III, pp. 263–306.

Where it is the habit of people to protect parts of the body with such amulets, it is considered grossly indelicate to be seen without them. An Australian native would not be seen in public without his nose-skewer. American Indians were reduced almost to suicide when the lobes of their ears tore, so that they could no logner support the huge ear-ornaments. Not only was it considered immodest to remove such amulets, but it was regarded as indelicate even to draw attention to, or to mention them. Like most other sentiments and usages these magical paraphernalia, originally intended to protect and promote the functions of human organs, became completely transformed in the course of time by other motives and ideas. The clothing of women especially became associated with the proprietary rights acquired over the women by their husbands through marriage. Very often their covering becomes more elaborate after the ceremony. These precautions have attained their most extreme expression in the veiling and seclusion of Oriental women. With sexual morality, however, clothing has nothing to do, and the modesty of women is often in inverse proportion to the extent in which they cover themselves.[2]

Clothes are regarded in primitive society as a part of the wearer's personality and as expressing his occupation and his status. Everywhere the distinctive dress of each sex implies that the person wearing it is engaged in the occupations peculiar to that sex. Among the Californian Indians, when the warrior becomes too old to take part in expeditions, he assumes the female attire and forthwith is employed in helping the women with their household and agricultural work. The apparel of the warrior proclaims his deeds. Tattoo-marks distinguish the free-man from the slave, and differentiate between degrees in status. "They are religious symbols, therapeutic, and prophylactic against disease. They are tokens of disgrace, of wifehood, of marriageability. They identify the individual, charm the opposite sex by magic, inspire fear in the enemy, render a person invulnerable, and bring good fortune." Clothes, finally, are insignia of office and of rank. As in civilized society they are a sign of distinction and a means of maintaining caste.[1]

---

[1] Briffault, *op. cit.*, Vol. III, pp. 263–306.

[2] *Ibid.*

As indispensable in overcoming the inclemencies of the weather as clothing is the use of shelters. Animals take shelter in caves, hollow tree trunks, and in thickets. Some of the lower primitives do the same. But even the higher primates construct sleeping nests in trees. The first shelters made by man were no doubt constructed by intertwining the branches of shrubs to afford protection for himself, and perhaps still more for the fire. It is certainly the fire which made the home something more than a mere shelter, a place of comfort, of sociability, and of privacy. Not that primitive man would deliberately seek privacy. Even people as cultured as the Samoans have no walls to their houses, though they know perfectly well how to construct them, for they are skilled builders. The fire gave protection not merely against the weather, but also against wild animals. Around the hearth, as Lippert says, the home arises.

The form of the dwellings is determined by aesthetic requirements, the material used, environmental factors, and the purpose it has to fulfil. The simplest geometric patterns, the circle, the oval, the triangle, and the quadrangle, are everywhere employed. The materials often determine the form. Where large timbers are used there will be a tendency to produce a rectangular ground plan, especially if the beams are laid horizontally. Where the timbers are placed on their ends a conical hut is likely to be produced. The conditions of life of the inhabitants determine the size and the materials used. Nomadic peoples attach more importance to the transportability than to the comfort of their houses. Sometimes small houses are built, each accommodating only one family, often they include several families. Separate buildings may be made for the men, the boys and girls, for public purposes, and for the storage of food. Safety is often a predominant consideration. This is reflected not only in the cliff-dwellings of the Hopi, but especially also in the pile-dwellings built by neolithic Europeans and by numerous primitive peoples to this day. The pile-dwelling is often built above dry ground to afford protection against head-hunters, wild animals, and mosquitoes. It is the typical building in Indo-China and in the Indian Archipelago. Where the Europeans have brought security and peace in the East Indies and in New Guinea there has been a tendency for the poles to be discarded, and for the houses to descend to the ground. The introduction of European axes, on the other hand, has made the pile- and tree-dwelling less safe. The first Spaniards who arrived on the mainland of South America, seeing a resemblance between an Indian village and Venice, called the country Venezuela, or Little Venice.[1]

---

[1] Sumner and Keller, *op. cit.*, Vol. III, pp. 2131–2.

The roof was the origin, and among most primitive peoples remains the main feature, of the house. Walls were a later addition, made no doubt by sedentary peoples. They increase the inside space and protect it against dampness. Doors are often, windows mostly, lacking. Some Siberians, however, have windows of stretched eel-skin, the guts of animals, or split mica, which admit light, though they are not transparent. The entrance serves not merely to let in men and light, but usually acts as a chimney as well. It has been maintained that the smallness of the entrance and the lack of windows are intentional. For this keeps the smoke in the house, thus freeing it from insects, and preserving the food suspended from the rafters.[1] The hygienic effects are less desirable. The high mortality of the Eskimos has been ascribed to the continuous inhaling of the soot, given off by numerous lamps which are kept alight during the night in dwellings without ventilation, the carbon particles ultimately clogging the cells of the lungs. Europeans find prolonged residence in such houses intolerable.[2]

---

[1] Heilborn, *op. cit.*, Vol. I, pp. 77–8.

The furniture is usually extremely scanty. The bed, in its most primitive form, consists of leaves or skins spread on the floor. The Bushmen simply dug holes in the ground. The raised bed was intended primarily to protect the sleeper from the vermin and dampness of the floor. The space underneath the bed is usually reserved for the storing of provisions. Hammocks are found in South America and in New Guinea. Stools and tables are much rarer than beds. A mat stretched on the ground does away with the need for both. The raised seat and the throne are the prerogatives of nobility. Among the north-west Indians the chief alone possessed a chair, and utilized it only on ceremonial occasions. The round table may have developed from the plate provided with a stand, so as to obviate the necessity for the seated guest to keep it in his hand. Tables are found among some of the peoples of the Pacific. The men of Papua lie on them while eating, so as not to be disturbed by the domestic pigs. Plates are plaited or made of wood, bark, or clay. Knives are generally made of stone or shell. Spoons are of shell, tortoise-shell, horn, and other materials. Ceremonial forks for eating human flesh are found among the Polynesians. For drinking-bowls the savage makes use of his hand, of natural objects such as gourds, coconuts, or ostrich eggs, and of pottery. Skulls are sometimes used as ceremonial cups. In the Roman Church the custom of drinking from the skulls of saints was maintained till late in the Middle Ages. Containers consist of natural objects: skin bags, wooden bowls, plaited articles, or pottery. A few cooking utensils and a stone pestle and mortar make up the inventory. Light is supplied by the hearth, as among the ancient Greeks, by torches, or by lamps burning oil or fat. Among the Eskimos, on the other hand, the lamp serves also as the hearth.[1]

---

[1] Weule, *op. cit.*, pp. 20–1.

[2] Weule, *op. cit.*, pp. 41–2.

As soon as the twisting and intertwining of branches to form a rude shelter is performed with a certain care, the art of plaiting is invented. Owing to the fragile nature of the products, examples of wickerwork could hardly have survived from prehistoric times. That the art of weaving baskets, however, must have been carried to a high state of perfection in paleolithic times, with elaborate designs and considerable ornamentation, can be deduced from the fact that some of the earliest pottery, an art dating from the close of the Mesolithic Age, was decorated in imitation of basketwork.

> Basketry and matting together constitute a most important division of savage invention. They are the one art that is more beautiful among the uncivilized. Enlightened nations express their aesthetic conceptions in lace and cloths and embroideries, the savage woman gives vent to her sense of beauty in basketry.[2]

Among modern savages the art was most highly developed among the Californian Indians, a people standing at a very low level of culture.

As rods are displaced by vegetable fibres, a search is likely to be made for those which are pliable and tough. When these are spun into yarn and the weaving hand makes use of tools, the way is opened for the development of the various branches of the textile trade. The turning of the twigs and grasses to make them tough and durable, especially for making knots, no doubt suggested the idea of spinning, the art of rolling together threads so that they twine round one another. Weaving, on the other hand, is merely a developed form of plaiting. It developed from mat-making, and such a large number of intermediate stages has been preserved in use that it is difficult to draw a sharp line between the two processes. But in the case of mat-making, though the warp may be set up in a frame, as is done in weaving, the warp strands are moved singly for the passage of the weft, as in basket-making. Weaving, on the other hand, makes use of a loom, an apparatus which enables the separation of alternate warp strands in sets, so that the weft strands can be passed easily across the whole width of the warp, thus saving the tedious work of taking up each strand separately.

---

[1] Heilborn, *op. cit.*, Vol. I, Ch. IV.

[2] Mason, *The Origins of Invention*, p. 228.

The raw materials of the textile industry have from very early times been certain vegetable fibres such as flax, hemp, and cotton, and animal products. Flax was widely used in prehistoric times. It grows in practically all climates, from the north of Russia to the valley of the Nile. The material was manufactured into cloth of good quality by the lake dwellers of Switzerland, and was utilized by the Badarians as early as 5000 B.C. The earliest inhabitants of Susa also grew flax, and knew how to weave it skilfully. Hemp is grown throughout the middle latitudes, and seems to have originated somewhere in western or central Asia. It spread eastward to China and southward to India at a very early date. As early as the twenty-seventh century B.C. hemp was used in China, and material manufactured from it clothed the great majority of the people. Its introduction into western Europe seems to date only from the fifth century B.C. Flax and hemp maintained a predominant position in the textile trade till the beginning of the nineteenth century, when the invention of the cotton gin gave a great impetus to the manufacture of cotton. Cotton was used in the earliest civilizations of India. Herodotus describes the Indian troops of Xerxes as clad in this material. Wool, on account of the ease with which it can be carded, spun, or felted, and the comfort derived from wearing it, was one of the earliest materials used for clothing. The Sumerians are invariably depicted as wearing tasselled kilts of wool. In hot countries, such as Egypt and Mesopotamia, however, woollen fabrics were of less importance than those made of local flax, or of silk and cotton imported from the East. Silk because of its fineness, strength, and lustre, as well as the facility with which it can be dyed into the most rich and delicate colours, has from early times been prized as a material for dress and decoration. The silk industry is said to have originated in China through royal patronage as early as 2700 B.C. It was for a long time a Chinese monopoly. In the West its use remained till recently the privilege of the rich, the wearing of which neither sumptuary laws nor prohibitions could eradicate.[1]

The art of weaving is widely distributed, though it is not found among hunting and collecting peoples, nor in some sedentary societies. It appeared in Europe in the Neolithic period. Peruvian textiles are unsurpassed, even at the present day, for their beauty and quality of construction. Their tapestry is superior to French Gobelin. Many pieces contain nearly three hundred weft yarns to the inch. For variety of construction, fineness of weave, and brilliancy of colouring, Peruvian textiles have no rivals anywhere.[2]

The art of plaiting seems to have had important effects also on the development of ceramics. The use of clay to plaster the crevices in windscreens dates from prehistoric times. Clay was also used from the earliest times to smear the inside of baskets in order to make them watertight. The practice no doubt originated from the natural silting up of the wickerwork with mud contained in the water. Such watertight baskets smeared with clay were used by the Indians in the dry areas of North America, where water had to be transported over long distances during the dry period. Gonerille found wooden cooking utensils with the exterior smeared with clay in use along the coast of Brazil. From the accidental burning of such a windscreen or basket, or through its being merely exposed to the sun, the clay would be baked hard, and would remain behind after the wooden frame had perished. This would in the course of time suggest the manufacture of clay utensils without the plaited work. There are to this day tribes in northern Nigeria, the Gwari and the Katab, who plaster clay on the outside of baskets and put both pot and mould in the fire. The basket is consumed, and the pot left with an interior decoration of wickerwork.[1] In parts of southern Nigeria the term for a potter literally means a "weaver of pots."[2] Some of the earliest known pottery, both from Susa and from pre-dynastic graves in Egypt, were decorated in imitation of basketwork.

---

[1] "Silk;" "Flax, Hemp and Jute," *Encyclopaedia of the Social Sciences*; Childe, *New Light on the Most Ancient East*, pp. 179, 209.

[2] Lowie, *op. cit.*, pp. 90–2.

The technique of basket-making seems also to have suggested the coiling method of manufacturing pottery. This method is very old and very widely distributed. It was used in the construction of the pottery found in the kitchen middens and in Campigny. To-day it is widespread in the Old and especially in the New World. It consists of preparing rolls of clay which are coiled spirally or in circles, one upon the other. Each roll as it is added is firmly united with the base, and the finished pot rarely shows its spiral or circular origin. This technique may also, however, have been suggested by the forming of layers of clay on a solid basis for enclosing a liquid substance. The formation of vessels out of lumps of clay in playful activity would suggest a very simple origin of pottery. The small and very crude bowls of baked clay found at Lodi in California show the germs of pottery-making in at least one place. In this particular case mud balls were baked in the process of stone-boiling.[3] The method of modelling is also very widely distributed among primitive peoples.

The manufacture of pottery is not an easy matter. The clay must have the proper chemical composition and texture. Some clays are too sandy and cannot be shaped, others are too plastic, and have to be tempered with sand or potsherds. The clay has to be washed and kneaded. Before firing the finished product has to be slowly dried in the sun or in the shade, for the rapid liberation of water would burst the sides of the vessel. Finally it must be heated to a temperature of at least 400° C., or it would crumble into pieces. The uniform heating of a pot in an open wood fire, however, requires prolonged experience. Even skilled artisans often spoil their material. The development of pottery therefore testifies to much patient observation and experiment as well, no doubt, as to many a lucky discovery.

---

[1] Harrison, *Pots and Pans*, p. 28.

[2] Sayce, *op. cit.*, p. 193.

[3] Nordenskiöld, *op. cit.*, pp. 287–8.

A great advance was made in the fabrication of pottery by the invention of the potter's wheel. The origin of the wheel was no doubt a movable support, the base of a broken pot, a mat, or a board, which makes it possible to turn the soft vessel so that it can be worked on from all sides. During the Old Kingdom the Egyptians were utilizing a pivoted disc that revolved readily as the pot was being shaped. This device may have suggested the use of the vehicular wheel, which was used by Sumerian potters as early as 3000 B.C. The shaping of pots by hand is a slow process, and although a high level of perfection is sometimes reached, this is attained only by the skilled craftsman. The use of the wheel enables even the mediocre worker to obtain both speed in production and certainty of execution. It led to the manufacture of pottery on a large scale, to its commercialization and specialization, and therefore the transfer of its production from women to men. The wheel is purely an Old World device. The Mexicans and Peruvians, however, sometimes multiplied a particular form by using a mould. They had therefore hit on the modern principle of mass production. Their best products are equal to the finest made in the archaic civilizations of the Old World.

All prehistoric pottery, as well as those made by modern backward peoples, is earthenware in its primitive form of baked clay. It is often very soft as a result of firing which was neither sufficiently intense nor sufficiently prolonged, and is never completely waterproof. In hot climates porous pottery may indeed be an advantage in keeping liquids cool through evaporation. For most purposes, however, it is desirable that the pottery should be hard, smooth, and impermeable. The practice of varnishing with resin or gum is widely distributed, and besides the ornamental effect makes the pottery less porous. But true mineral glazes are unknown among primitive peoples.

The potter has from the start been a great plagiarist. The forms of the objects already used as containers were often copied quite naturalistically. Some of the earliest examples of pottery found in the Near East were made on the model of gourds. Others, again, were made in imitation of the leather bags which hunting peoples use as drinking-cups or water-bags. Not only the form of the pouch but even the seams were imitated. Some North American Indians copied receptacles made of sewn bark. In pre-dynastic Egypt pots were sometimes made on the model of stone vessels. Later metal, and especially bronze, vessels were imitated. The potter therefore received abundant inspiration for the forms of his wares both from natural and manufactured objects, and in turn his forms inspired receptacles made in other materials.

The most useful aspect of the invention of pottery is that it provides a utensil in which food can be cooked over a fire, thus obviating the laborious process of stone boiling. The use of vessels that can hold water, can be used for cooking over a fire, and be effectively cleaned after use, must have had important effects on the variation of the diet, on the use of vegetable and of hitherto unpalatable food, as well as on the hygienic conditions of the home. The distribution of pottery, both in the Old World and in the New, coincides broadly with the agricultural regions. Like so many other inventions, it shows the advantage of a sedentary life for the appreciation of crafts necessary for a decent standard of living.

CHAPTER VIII

TRANSPORT

MAN, or rather woman, was the first beast of burden. She has, among primitive peoples, remained it to this day. Among hunters and collectors she carries the smaller children, and the baggage so that the men can be free to hunt. This division of labour crystallized into custom and was maintained in the higher societies. The man loses caste by carrying goods. When the Bedouins decide to migrate in search of new pastures, the men mount their camels and saunter off in utter unconcern. All the work of breaking up the camp, packing the camels, and transporting the baggage is left to the women. A native, returning from a town in South Africa, is met at the railway station by his wife, who carries his baggage on her head while he rides on his bicycle by her side. An Indian attributed all the misfortunes of an expedition to the fact that women had not been allowed to accompany them. "Women," he said, "were made for labour; one of them can carry, or haul, as much as two men can do. They also pitch our tents, make and mend our clothing, keep us warm at night, and, in fact, there is no such thing as travelling any considerable distance, or any length of time, in this country without their assistance."[1] It is only where slaves are kept that this work tends to be transferred to men. In higher societies, where the carrying trade becomes specialized, it is performed also by free men.

The human body is well adapted to carrying burdens in a large number of different ways. The load that can be carried without attachment, however, is not very big. To increase the carrying power of the human beast of burden numerous devices have been invented. These vary according to the nature of the load and the part of the body from which it is suspended. Of the receptacles the baby-carrier is no doubt the oldest. For the carriage of goods there have been invented numerous kinds of baskets, bags, and burden-frames, as well as the necessary means of attachment and of walking. The unprotected foot can stand much rough usage. Primitive shoes, on the other hand, must often be an impediment rather than an aid to movement. "No one fails to remark the extreme roughness on the inside of most primitive footgear."[1] As a purely utilitarian contraption they are essentially a means of travel over rough or thorny country. People who voyage mostly by water are therefore generally the most unshod. In the Arctic regions shoes are a necessary protection. The Eskimos are the most completely shod of all primitive peoples. Snowshoes and skis are a further necessary aid to travel in these regions.

---

[1] Mason, *Woman's Share in Primitive Culture*, pp. 129–30.

Savages are renowned for their powers of endurance. The women often surpass the men. In Melanesia women are frequently met with a child on the back, toting a heavy load of yams on the head, above this a bundle of firewood, and over the shoulders a large bamboo filled with water. The performance of professional carriers is even more remarkable. In the days before there were other means of transport Indians used to be employed to carry provisions from Hope to the Similkameen tribes. The instance is given of an Indian who carried three sacks of flour weighing 150 pounds, walking on snowshoes, for a distance of sixty-five miles over this rough mountainous trail, with a depth of twenty-five feet of snow on the summit of the Hope mountain.[2] In parts of China human carriers have to this day remained cheaper than pack animals for the transport of goods over narrow and circuitous routes.

Yet compared with modern means of transport the human being is slow and inefficient. A primitive pack-man cannot possibly transport a hundred pounds more than ten miles a day.[1] The pack load of a man, from 60 to 100 pounds, is by many peoples used as a unit of weight. The Malays, for example, have a "natural load" unit of about 80 pounds. A modern locomotive, on the other hand, can easily haul 1,000 tons. If it runs for only ten hours a day at a speed of thirty miles per hour, it would haul 300,000 ton-miles, or the work of twice that number of human carriers.

---

[1] Mason, *Primitive Travel and Transportation*, p. 311.

[2] Mason, *The Origins of Invention*, p. 342.

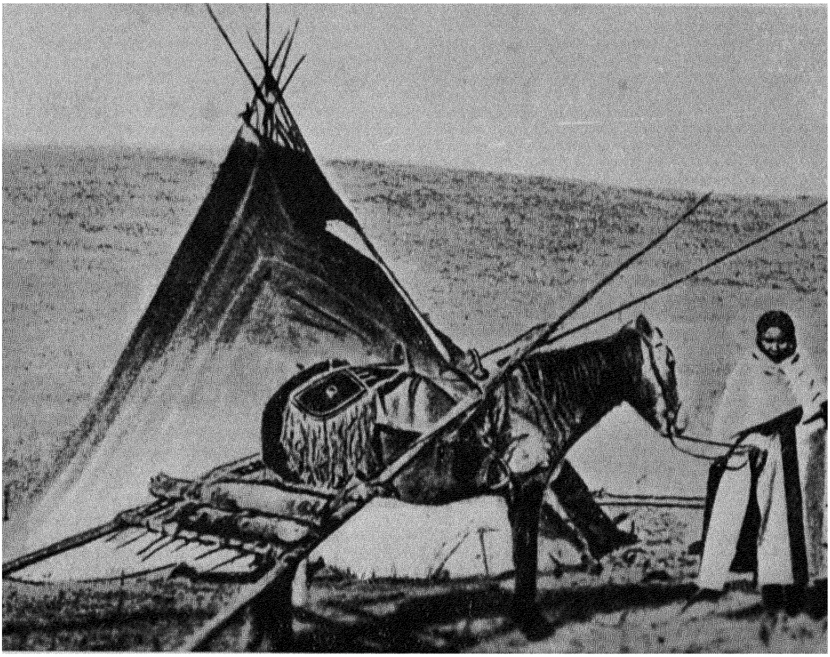
The weight that the human being can carry on his back hardly exceeds that of his own body. By dragging, considerably heavier loads can be transported. The simplest contrivance used by primitive peoples is the Indian *travois*. It consists of two poles tied firmly rogether at one end and separated by a short spar near the bottom, in the form of an A. The closed end was attached to and rested on the back of a dog or a horse, while the open end dragged on the ground. Tent poles were attached to horses in this way, the skin cover of the tent serving as a base for baggage. The Irish slide-car is based on the same principle, though in the form of an H rather than an A. The two side poles, or shafts, are connected by crossbars and fitted with a frame to hold the load. The horse is harnessed between the shafts at one end, while the other end drags on the ground.

A more efficient method, especially for heavy loads, is to let the poles drag on the ground on the principle of the sledge. The sledge is to-day used chiefly for transport over snow. Formerly it was used far more widely for the transport of heavy articles. Especially in the civilizations of antiquity it was used to drag enormous blocks of stone up inclined planes for the construction of public monuments.

The wheel seems to have developed from rollers used in moving heavy weights. This was a device well known in the ancient world. Such a roller would evolve into a pair of solid wheels, in one piece with the axle, by the

---

[1] Mason, *The Origins of Invention*, p. 342.



[*Courtesy of Messrs. Hutchinson & Co.*

THE INDIAN HORSE-TRAVOIS

simple process of reducing the thickness of the middle of the block. This reduces the weight and the jolting movement and helps to keep the roller under the frame. A pair of downward projecting pegs on each side of the axle further help to secure the wheels and axle in position.

The earliest wheels are fixed to the axle and turn with it. The Roman *Plaustrum*, or farm cart, for example, had massive clumsy wheels, one-third of a metre thick, turning with the axle, and kept in position by wooden pegs. Such wheels are still in use in some parts of the world. A reversion to them is shown in the wheels of railway rolling stock. Sometimes the block wheel is reduced in weight by portions being cut out between the rim and the centre. The spoked wheel may have originated in this way. It is more probable, however, that it developed from the practice of making solid wheels from separate pieces of wood, clamped together by means of rims and crossbars. The revolving wheel seems to have been first used in chariots.

The wheel no doubt originated in Mesopotamia, where wheeled vehicles have been discovered in the tombs of Kish and Ur dating from before 3000 B.C.[1] It is entirely an Old World device, and forms the basis of all modern means of transport by land. By 1700 B.C. the principle of the wheel and the cart was fully developed, and only improvements in details were made until the invention of the railway and the automobile.

At first men were harnessed to pull loads, as is shown in Egyptian and Assyrian sculptures. A great deal of patience and tact must have been required in the attempts to make animals do the work. To this day an Eskimo dog requires a great deal of lashing before it becomes sufficiently tractable to be useful The larger domesticated animals were no doubt used as pack-animals before they were attached to vehicles. The use of animal traction relieved men, and especially women, of an immense amount of drudgery. The advantage of a strong and fast animal, such as the horse, both in peace and war, was shown in the history of Asiatic nomads as of the American Plains Indians. The food supply became surer, the tents larger, and the household property increased in quantity and in quality.

---

[1] Childe, *The Bronze Age*, p. 49.

As the use of vehicles other than the sledge and the *travois* is not found among primitive peoples, roads are of relatively little consequence. But the carrying of loads usually involves the creation of paths, the removal of brushwood and loose stones, the cutting of steps at steep escarpments, the construction of bridges, and the placing of stones to guide the traveller. Little labour is usually expended by primitive peoples on such improvements. The trails wind in and out between the heavier stones which are seldom removed, and rain and wind create a natural pathway. In the semi-civilized Peruvian and Mexican empires, however, the making of roads was of more importance. In Peru the narrow roads were even paved with stone and provided with post stations. Shelters to provide night-quarters for travellers are sometimes erected by primitive peoples on the main routes of traffic.

Information is conveyed with remarkable rapidity among primitive peoples by means of fire and smoke signals, the beating of drums, or the sending of messengers. Special amnesty is everywhere given to travelling carriers and traders. The Montezumas even had relays of runners between the sea and the city of Mexico, so that they could receive fish and other lowland products in a fresh condition.

> Communication was maintained with the remotest parts of the country by means of carriers. Post-houses were established on great roads, about two leagues distant from each other. The courier, bearing his dispatches in the form of a hieroglyphic painting, ran with them to the first station, where they were taken by another messenger and carried forward to the next, and so on until they reached the capital. These couriers, trained from childhood, travelled with incredible swiftness, not four or five leagues an hour, as an old chronicler would make us believe, but with

such speed that dispatches were carried from one to two hundred miles a day.[1]

Bridges are necessary to enable transit over narrow streams. A log thrown across a stream is no doubt the simplest device. Bridge building is especially developed in the tropics, where the necessary pliant materials, rattan, cane, bamboo, and vines, are available. Suspension bridges are anchored to trees or stones, and are sometimes as much as seventy yards long. Over these frail and swaying structures pass men and pack-animals. The Incas also constructed rude stone bridges. The Inca Huayna Capac even had a pontoon bridge built over the Maranon for the use of his troops.

The crossing of rivers and other bodies of water must have presented formidable obstacles to the movement of primitive man. That they were not insuperable and were overcome at an early stage in human history is testified by the worldwide spread of early man, as well as by the colonization of islands such as Capri in Palaeolithic and Oronsay in Mesolithic times. The incentives to devising improved means of navigation must have been continuous throughout man's history. For not only are they a direct help in obtaining food, but, when once suitable craft have been invented, waterways, instead of being a hindrance, become also the easiest means of travel and of transport. Few primitive peoples have, however, devised vessels which are safe outside inland waters and coastal regions. The ocean-going craft of the Polynesians were quite exceptional.[2]

Floats were no doubt the oldest means of navigation, and are still used as an aid to swimming. In their most primitive form they consist of logs of wood. North American Indians frequently crossed rivers by clasping the left arm and leg round the trunk of a tree and swimming with the right. The Australian sits astride a log pointed at both ends, his feet resting on a rail made of small sticks driven in on each side, while he paddles with his hands. Inflated skins, calabashes, and other containers are often used as floats. Surf-boards are a popular means of amusement in Hawaii.

---

[1] Prescott, *Conquest of Mexico*, Vol. I, p. 43.

[2] Horniman Museum, *Travel and Transport*, p. 29.

A number of logs tied together become much more stable. Rafts are constructed either of logs or of bundles of bark, twigs, or reeds. They are especially suited for carrying cargo downstream, for usually they are too clumsy to be effectively propelled by means of paddles or oars, and at sea they are at the mercy of wind and tide. The natives of the Gulf of Carpentaria, however, navigate on rafts from island to island, and even cross over to the mainland, risking the danger of being blown out to sea.[1] It was no doubt on such rafts that palaeolithic man crossed rivers and the Australians first navigated the narrow channel which then separated Australia from southern Asia. Extra buoyancy is sometimes given to rafts by attaching to them inflated skins, calabashes, or earthenware pots. Rafts seventy feet long and twenty wide, provided with sails, were formerly used off the coast of Peru. In China enormous rafts are to be found carrying sometimes as many as twenty huts with their occupants.

When the reed raft tapers to a point and has the sides raised it obtains the form of a canoe. Such vessels are usually constructed from long drawn-out bundles of reeds, the central one serving as the keel. Such craft are very permeable to water, but are fairly seaworthy. The Indians used to cross the Gulf of California in similar vessels. The earliest wooden boats of Egypt were made in imitation of these reed canoes.

Dr. Harrison suggests that the bark canoe also may have originated from the use of pieces or bundles of bark as floats or rafts. Then the curved shape of a large piece no doubt suggested the closing of the ends to make it into a canoe. Such vessels are constructed of one or of several pieces of bark sewn together. They are sometimes strengthened with wooden ribs in the form of curved sticks, but remain extremely fragile, and new holes have to be stopped continuously. Bark canoes are widely distributed. They are used chiefly in inland waters, as they are too light and fragile for use in the open sea. They are especially serviceable where numerous rapids necessitate the frequent carriage of the vessel.[1]

---

[1] *Man*, 1908, p. 88.

In the case of the bark canoe the ribs and supporting parts are secondary additions. With the skin canoe, on the other hand, the skin is stretched over a framework already prepared. Similar in construction, but more clumsy in form, are the bull-boats or coracles found in different parts of the world. These consist of a circular structure of rods covered with hide. Herodotus described such boats "circular like bucklers" in use on the Tigris in his day.[2]

> The largest of them carry a cargo of five thousand talents. Every vessel has a live ass on board, and the larger ones more. For after they arrive at Babylon, and have disposed of their freight, they sell the ribs of the boat and all the reeds by public auction; then, having piled the skins on their asses, they return by land to Armenia, for it is not possible by any means to sail up the river by reason of the rapidity of the current.

Vessels similar in form are used in Mesopotamia to this day.

The skin canoe and the coracle embody the principles of construction of the ship—a skeleton enclosed in a watertight cover. They, however, represent relatively advanced methods of boat construction. The evolution of the ship, through all its stages of development, can be traced also from the dugout. No vessel is more widely distributed and none has a longer recorded history.

The construction of a dugout is not an obvious device. The foot of a tree is often used by savages as a fireplace, the inside being consumed, and leaving only the hollowed trunk behind. Some such tree probably gave man the idea of the dugout. Fire in any case is generally used as a means for its construction, both for felling the tree and for scooping out the inside. The sides are stretched, either by lighting a slow-burning fire beneath the hollow log, or by boiling water in the inside through the addition of heated stones. Cross-pieces are then driven in to obtain the desired shape. The outside may be hardened by fire to make it more resistant against insects and decay.

---

[1] Horniman Museum, *Travel and Transport*, pp. 35–8.

[2] Herodotus, I (194).

The size of the dugout is limited to the size of the tree. Longer canoes are occasionally made by joining together the ends of two or three logs, the vessel being thus built up in sections. More frequent is the addition of side planks to increase the height and width of the boat. This is the first step in the evolution of the dugout into a plank boat. As more and more wash-strakes are added the dugout portion decreases in importance. Finally, it is represented only by a V-shaped log, forming the keel, on which the sides of the vessel are built. Many plank boats still retain this last evidence of their origin.

Usually the planks of the boat are stitched or lashed together by means of strings or cords. The Arab boats which sailed the Indian Ocean before the arrival of the Europeans were constructed in this way. Similar ones are still to be found in the Persian Gulf and in the Indian Ocean. An improved method is to attach the planks by means of wooden pegs or trenails. Iron nails were confined to Europe. The seams are caulked with fibre, gum, resin, or other substances. Such boats are seldom completely watertight. The Samoans smeared the edges of the planks to be fitted together with turmeric. These were then rubbed together, and the portions to be removed could be easily detected by the absence of the turmeric mark. Some of the boats in the Pacific were so well constructed that it required close examination to detect the seams on the outside.[1]

The stability of the canoe is much increased in the Indo-Pacific region by the use of the outrigger. This consists of a log running parallel to the boat, and attached to it at some distance by means of projecting poles. An outrigger may be attached to each side of the canoe, but the single form is more common. This contrivance greatly reduces the risk of the boat being upset, since the resistance of the float to submergence prevents capsizing on that side, whereas its weight prevents overturning on the other side. A similar device is to connect two parallel canoes at some distance from each other. Double floats were in use on the Nile more than fifty centuries ago. The double canoe is to-day found only in Polynesia and in Fiji. It is still a disputed point whether, in the Indo-Pacific region, the outrigger canoe was derived from the double canoe by the gradual degeneration of one element of the double vessel, or whether the double canoe, on the contrary, evolved from the outrigger canoe.[1]

---

[1] *Travel and Transport*, pp. 50–4.

The gap between the outrigger and the canoe and between the double canoe is usually built up to form a platform. The vessel thus acquires the qualities of a raft both in capacity and in stability, although the resistance offered to the water is much less. It has, in fact, been suggested that both these vessels developed from a raft the central part of which is supported on two logs.[2]

Primitive boats are usually propelled by paddling. The paddle is certainly older than the oar, though the oar was used quite early in Egypt. It does not seem, however, to have passed outside the sphere of diffusion of Europe and Asia. More force can be exerted by means of the oar, but less noise is made with the paddle and the occupants can squat on the bottom of the canoe, thus keeping the centre of gravity low. Both are an advantage in primitive navigation. The large number of paddlers, however, leave little space for passengers and for freight. By paddling rhythmically and resting for short intervals a fairly rapid speed can be maintained for hours. Nansen describes a kaiak journey of eighty miles performed in a day.[3]

Skins, mats, or blankets held up to catch the wind no doubt represent the first stage in the evolution of the sail. The use of sails was confined to relatively advanced peoples, and to those primitive peoples who may be described as seafaring. Outside Europe and Asia, and the relatively advanced civilizations of Peru and southern Mexico, sails were possessed especially by the Melanesian and Polynesian peoples; perhaps also by the Caribs of South America.[1] They are unknown to most inland peoples, and are of little value in river transport, except in a country like Egypt, where the prevailing wind is north. The Egyptians were not slow to take advantage of this aid against the current. It has been maintained that the sail was used on the reed canoes in pre-dynastic times. It was certainly in use as early as the Second Dynasty, or more than 3000 B.C.[2]

---

[1] Rivers, *op. cit.*, Part III, Ch. VII.

[2] Pitt-Rivers, *Early Modes of Navigation.*

[3] Friederici, *Die Schiffahrt der Indianer*, p. 71; Mason, *Primitive Travel and Transportation*, p. 578.

Water transport is by far the easiest method of transporting bulky commodities in primitive communities, as it was in civilized societies till the invention of the railway and the automobile. For inland transport it is, however, limited to the existence of natural waterways. It was important therefore only in countries as well provided with internal water routes as large parts of America, the Congo, Egypt, Europe, and parts of southern Asia. The existence of sheltered seas dotted with islands is especially favourable for the growth of water transport. Such favourable opportunities exist over a large part of Europe, in the West Indian Archipelago, and especially in the Pacific.

Primitive craft vary in size according to the material at hand, the methods of construction, or the needs of transport. Small, light vessels are favoured near the sources of rivers where rapids necessitate their frequent carriage. Small craft only two metres long, and capable of bearing at most two passengers, are, for example, quite common on the upper reaches of the Amazon. Such vessels are often made of bark, so that the greatest care has to be taken in handling them, for a false step tears a hole through the side or capsizes the canoe. The first missionaries, in spite of their zeal, were loud in their complaints about the discomfort suffered in travelling by such craft. Near the mouths of rivers and for use at sea considerably larger boats are used. Dugouts capable of carrying 150 persons are mentioned, though they are exceptional. Boats capable of carrying from thirty to forty persons must already be considered as very large. The large canoes of North America could carry 1,500 pounds of skins. But the greatest care had to be taken, as the least shifting in the distribution of the load would cause them to capsize. The Indians of north-west California had canoes which could carry a load of five tons. The addition of wash-strakes and the use of the outrigger considerably increase the loads that can be carried. Examples are recorded of large Melanesian and Polynesian craft which "would safely convey a hundred persons, and several tons of goods, over a thousand miles of ocean." The largest plank boats constructed by the Ké islanders of New Guinea were as much as from twenty to thirty tons burden. This was the usual size of the ships which navigated the seas of Europe as late as the seventeenth and eighteenth centuries.[1]

---

[1] *Travel and Transport*, p. 67; Friederici, *op. cit.*, p. 79.

[2] Peake, *Early Steps in Human Progress*, p. 183.

The narrow dugout and the canoe are used mostly in inland waters, though primitive seamen sometimes put out to sea in them, trusting to their ability to swim to land in case of accident. With the addition of wash-strakes or outriggers to their craft the navigators boldly venture out to sea. They naturally, however, prefer to hug the coast. Even the sea-worn Vikings preferred, wherever possible, to pull their ships on shore during the night. The Indians of Florida had commercial relations with the Bahamas in pre-Columbian times; the Beothuks visited the distant Funk islands; the Caraios of the Brazilian coast traded with Venezuela, Columbia, and probably along the whole Gulf of Mexico, as far as Florida. The Sewee of south Carolina, towards the end of the seventeenth century, even conceived the daring plan of equipping an expedition to sell their furs in England directly, thus escaping the extortionate profits of the European traders. They built a numerous fleet of large canoes, packed all their skins, and, manned by practically all the able-bodied seamen of the tribe, they set out one fine day in the direction of Great Britain. They no doubt underestimated the distance. But hardly had they lost sight of land when they were overcome by a storm. Most of the canoes were wrecked. The survivors were picked up by an English ship and sold as slaves in the West Indies.[1]

---

[1] Friederici, *op. cit.*; *Travel and Transport*, pp. 52–5.

The relatively large crews needed for paddling and the difficulty of storing food make long continuous voyages in canoes impossible. Sails are commercially important in that they increase the proportion of freight to equipage that can be carried, and thus greatly increase the distance that can be navigated. The speed naturally depends on wind and weather. In New Guinea pottery was transported four hundred miles from their centre of manufacture. The Polynesians undertook much longer trading and plundering expeditions. They colonized the islands of the Pacific, settled in New Zealand, kept up communications with Hawaii over a distance of more than two thousand miles of open ocean, and perhaps even reached America.

On these voyages the Melanesians and Polynesians orientated themselves by astronomical observations, by ocean swells, and by an intimate knowledge of the position of different islands. From these observations charts were often constructed, the possession of individuals, which could be interpreted by them alone. Astronomical observations have obvious defects, as they can be observed only when the sky is clear. These defects were partially compensated by voyages being limited to the months when wind, weather, and astronomical conditions were favourable, by advancing from island to island, interrupting the journey when the wind was unfavourable, and by continuously keeping in view intermediate islands, on which a landing could be effected in case of emergency. The results that were achieved by such methods, through patience and daring, are astounding. The feats of the Polynesians were unsurpassed even by contemporary Europeans. They are, however, exceptional for a primitive people.

---

[1] Friederici, *op. cit.*, pp. 82–3.

CHAPTER IX

THE DIVISION OF LABOUR

It is possible that in the earliest stages of human dvelopment there was little division of labour besides the help given by the mother to her young in procuring food. For human beings must initially have acquired their food very largely by collecting, and in a purely acquisitive economy there is little scope for co-ordinated effort. As human beings are social in character, however, and live in groups, forms of spontaneous co-operation must have developed even in the earliest stages. With the development of technique and the transition to more assertive forms of gaining a livelihood, such as hunting and trapping, the scope for collective effort greatly increases.

The organization of the lowest existing savages is no longer based on the individual search and appropriation of food. The minute details which regulate the distribution of the spoils among hunting peoples show, on the contrary, a long history in the co-ordination of their activities and the development of a collective economy. This collective work is to a large extent maintained through all the forms of primitive economy. It is in fact significant that it is not in the gaining of subsistence that work becomes individualized, but in the crafts.

The various forms of social organization, the family, the clan, the local community, and the different associations, lend themselves naturally to collective effort. The co-ordination of activities is already evident in hunting. Thus in the buffalo hunt on the American plains the whole tribe co-operates, the men pursuing the animals, while the women and children form converging lines and frighten the animals into pounds. The boat crew is an important social unit among fishing peoples. Among the maritime Chuckchee the population of a village is often described as consisting of a certain number of boatfuls.[1] Collective work is highly developed in agriculture. It is seldom that a man or a woman tills the fields alone. Co-operation is especially necessary in the difficult work of clearing the land and of building the settlement. It also plays an important part in the execution of all communal enterprises. The building of a large canoe or a public house is usually performed by the whole community under the direction of the chief.

Communal labour is stimulated by feasts, "palliative concomitants," which both draw crowds and add zest to the work. The construction of a new public work among the Maori was usually preceded by the extension of cultivation beyond the normal limit. The labour is also lightened by being performed rhythmically and in accompaniment to songs. This facilitates the co-ordination of effort, relieves the physical strain, cheers the workers, and stimulates them both morally and physically.[2]

The primitive craftsman generally needs little help outside the circle of his own family. Where such help is needed it is furnished by the solicited assistance of his neighbours. But even when an individual is engaged on his own specific work, he usually prefers to do it squatting in the men's house, relieving the monotony by the company of his friends.[3]

Among the higher primitives communal work becomes modified, and sometimes partially superseded. In stratified societies contributions in labour are often imposed on vassals, and slavery is developed. Industry and commerce are sometimes carried on collectively by corporations or guilds. All this modifies the need for and changes the character of collective work.

The most primitive form of the division of labour is that between the sexes. Among hunting and collecting peoples the hunt is almost invariably the prerogative of the man, whereas the work of collecting falls to the woman and the children. When a people lives very largely on vegetable food alone, however, the harvest is gathered by the joint labour of the whole household. When moving—and the lower primitives move a great deal—the man has to be free to search for food and to resist attack. The woman therefore serves as the beast of burden, carrying the smaller children and the scanty possessions of the household. When settled at the camping place the men either relax completely or are engaged with the communal affairs of the group. The care of the legal and political relations and of religious practices falls to his sphere. The woman is the guardian of the hearth, on whom the care of the household largely devolves. It is the function of the men to protect the family, whereas it is the woman's obligation to provide for home comforts.

---

[1] Radin, *Social Anthropology*, pp. 138–9.

[2] Firth, *Primitive Economics of the New Zealand Maori*, pp. 232–3.

[3] Thurnwald, *op. cit.*, p. 211.

Protector Thomas gives the following description of the division of labour among the Wurunjerri when the State of Victoria was first settled:[1]

> In the Kulin tribes they seldom travel more than six miles a day. In their migratory movements all are employed. Children are getting gum, knocking down birds; women are digging up roots, killing bandicoots, getting grubs; the men hunting and scaling trees for opossums. They are mostly at the encampment an hour before sundown; the women first, who get the fire and water; by this time their spouses arrive.

The division of labour in hunting and collecting societies is often rather heavily balanced in favour of the men. So rigid is this incipient specialization of work between the sexes that an Australian woman will not dare to throw her waddy at a startled wallaby, but will draw the attention of the nearest man to its presence. A man, on the other hand, if he sees an edible root, will call a woman to dig it out.[2]

(The specialization between the sexes is due partly to differences in inherited ability. The men do the tasks requiring great spurts of muscular activity, nervous strain, and excitement, with corresponding periods of rest. To the women fall those of a more routine character requiring continuous exertion, but at a lower tension. Physical differences between the sexes seem, however, to be far less pronounced among primitive than among civilized peoples. The determination of sex in prehistoric skeletons is often difficult and doubtful, for the bones of the female are as massive and the muscular attachments almost as developed as those of the male. Among modern primitives the masculine type of woman is common, and even in civilized societies the physical differences between the sexes are less pronounced among the peasantry than among the more cultured urban classes. Differences in aptitudes and abilities between men and women may therefore be partly not the cause but the effect of the division of labour.[1]

---

[1] Thomas, *op. cit.*, pp. 262–3.

[2] *Ibid.*, p. 109.

Besides physiological differences this initial division of labour is due to functional necessities. It is the result of the limitations imposed on the female by the care of the children, which restricts her mobility and confines her to the hearth. This incipient division of labour becomes strengthened in the course of time by professional jealousy. Hunting becomes the prerogative of the man, the manly occupation, as opposed to inferior female work. A man will not submit to the degradation of doing woman's work. Women, on the other hand, do not consider the men's occupations as beneath them, and may be willing to perform these if permitted to do so. This specialization between the sexes crystallizes into custom, and is perpetuated in the higher stages of development, bolstered up by social sanctions after the justification for its existence had disappeared.

In the course of the development of each people special factors may come to influence the division of labour. The position therefore differs in different societies, although certain common features, which are the direct outcome of the initial division of labour, are found among practically all peoples.

---

[1] Briffault, *op. cit.*, Vol. I, Ch. IX.

Thus among the lower agriculturists the greatest part of the work of cultivating the fields usually falls to the women. From being the collector of wild plants she becomes the cultivator of domesticated ones. The men do most of the heavy work of clearing the fields and help to construct the settlement. Sometimes, however, the cultivation of certain kinds of plants or trees also falls to them. This is the case, for example, with the cultivation of sago, coco-nuts, and tobacco in the South Seas. Such specialization is no doubt due to special factors in the history of a people. Slowly as agriculture gains in importance the sphere of the men's work increases, until finally, when the cultivation of the soil becomes the dominant interest, the men take it over almost completely.

Among herdsmen the care of the cattle is the work of the men. This specialization often obtains a ritual significance, the presence of women being considered to have injurious effects on the animals. Thus the Romans, when they performed religious ceremonies for the health of their cattle, took care that no women should be present, or should learn the formulas used. In the Swiss Canton of Vaud it is still considered best by the old men to leave the women at home when the cattle are taken to the summer pastures.[1] This is no doubt largely the reason why, with the introduction of the plough, agricultural work is transferred to the men. Among the South African Bantu the women to this day do all the work in connection with cultivation, except ploughing, which is the prerogative of the men. As the potter's wheel is an adaptation of the vehicular wheel, which is connected with plough culture and animal traction, the fabrication of wheel-made pottery, too, is relegated to the men's sphere of duties.

This specialization between the sexes is found also in the crafts. The production of different articles is confined either to men or to women, or the different stages of production is relegated to the different sexes. As most

[1] Briffault, *op. cit.*, Vol. III, p. 194.

of the primitive crafts are home industries, they tend to fall to the sphere of the women.

Thus the female, being the more sedentary sex, would naturally take a greater interest in housing conditions than the male. It is she who constructs the hut in primitive societies, often with very little help from the man. She is therefore not merely the home-maker but also the home-builder, and is recognized as the "mistress of the house" even in patriarchal societies. The house is her property. Among several primitive peoples the woman alone, with her children, dwell in it. The men sleep elsewhere, and are only admitted to the homes of their wives as guests. Nor is it merely the rude huts and tents of the lower primitives that are constructed by women, but also the most elaborate buildings of the primitive world, such as the many-storied dwellings of the Pueblos. Women even contributed their share of labour to the erection of some of the finest monuments of antiquity.[1]

As the home-maker and the sedentary sex, the domestic industries devolved on her, and primitive industries are almost exclusively domestic in character. It was she who prepared the hides and made the first rude clothing, the dresses, and the boots as well. The manufacture of bark cloth is also generally the work of women. To dress the hides she devised various implements. The "scrapers," which form a large proportion of prehistoric tools, were no doubt made and used by women. Bushmen women made them in large quantities a few centuries ago, and Eskimo women utilize similar implements to this day. Women were therefore no doubt the first makers of industrial tools.[2]

Plaiting probably originated from intertwining the branches of shrubs to make the first rude shelters. This was feminine work. Basket-making was one of the earliest achievements of feminine industry. Even the lowest existing savages practice the art. Among the South American Indians, however, the weaving of baskets is the work of men, due no doubt to the fact that they needed receptacles in which to carry their hunting booty home.[1]

---

[1] Briffault, *op. cit.*, Vol. I, pp. 477–83.

[2] *Ibid.*, pp. 460–3.

Weaving, which no doubt developed from plaiting, is, on the other hand, almost as often the work of men as that of women. In Central America even the spinning is performed by men. Sewing also is often male work, and the women have to rely on their husbands to have their scanty attire mended. The missionaries caused much resentment in Central Africa in trying to set these family matters straight by instructing the women in what they regarded as their legitimate sphere of duty.[2]

Pottery is everywhere in the more primitive stages of culture manufactured by women. They were no doubt the original inventors. The men take no part in it. This traditional division of labour found its expression in religious practice. In the earliest Egyptian hieroglyphics the pot is the symbol of womanhood. Vases used in religious ceremonies among the ancient peoples of the Aegean were often in the shape of a woman. The pot was in Greece an emblem of fecundity. Goddesses were often worshipped in this form. The aboriginal races of India do so to this day. According to Greek tradition the first *patera* was moulded on the breast of Helen. The Zuni still make their pitchers in the form of a female breast, the nipple being left open to the last, and sealed with the solemnity of a religious rite and with averted eyes.[3]

As collectors of edible roots and grasses, women become acquainted with the properties of herbs. Throughout primitive society, therefore, women are the doctors; and often the surgeons as well.

The women, as the cultivators of the soil and the producers of manufactured articles, are in possession of the means of exchange. Among all primitive peoples barter is in the hands of women. They are the first traders. Even at higher levels of culture the small trade remains in their hands. The contempt with which many societies regard trade has been ascribed to the fact that it was originally women's work.[1]

---

[1] "Technik," *Reallexikon der Vorgeschichte.*

[2] Sumner and Keller, *The Science of Society*, Vol. I, pp. 136–7.

[3] Briffault, *op. cit.*, Vol. I, pp. 466–77.

Mining, the smelting of metals, and the making of weapons and canoes, on the other hand, are everywhere the work of men. They tend to monopolize the most strenuous, the most skilful, and the most interesting work, the spheres in which magic and ritual are especially developed. Men alone can qualify for the higher forms of magic. They are the witch-doctors, women the herbalists. Among the Maori the fact that a woman had taken part in the construction of a seagoing canoe would be enough to let it founder, for it would have deprived the vessel of the *tapu* on which its seaworthiness primarily depends.[2]

Women have therefore been responsible for the origin of most of the industries which have increased the material welfare of mankind. Primitive culture is largely confined to the household sphere. Here the woman can usually hold her own. For it is in the complicated relations of civilized society that men excel. In primitive communities, on the other hand, the two sexes are more nearly equal, in experience, in intelligence, and in enterprise.

Marriage among primitive peoples is largely an economic proposition, the co-operation of man and wife being essential for the attainment of a certain measure of prosperity. It is usually a prosaic affair, in which sentiment plays a subordinate part. The choice of a partner in fact is motivated largely by economic considerations.

In the same manner as the advances of a woman who offers samples of her agricultural or industrial products suggest the overtures of a commercial traveller rather than of a love-sick maiden, so the invariable form of a man's courting, in the lower stages of culture, is the presentation of specimens of his efficiency as a hunter, or proof of his prowess as a warrior.[1]

---

[1] Briffault, *op. cit.*, Vol. I, pp. 483–5; Heilborn, *op. cit.*, Vol. II, p. 45.

[2] Firth, *op. cit.*, p. 199.

No chivalrous Melanesian youth, says the Rev. Durrad, would think of marrying a weak girl to whom he would have to devote his help. "Such romance is not to be found in Melanesia."[2] So important economically do the Shans of Farther India consider the marriage bond that the widower is exempt from all taxation.[3]

The division of labour between the sexes has important social effects. The position of women would naturally tend to be influenced by their importance as producers of wealth. Thus the important role played in production by women among hunters and collectors, and hoe cultivators, goes a long way to explain the large measure of social equality and independence which they enjoy in these societies. Where pastoralism and plough culture predominate, on the other hand, the importance of women diminishes, they become economically more dependent, and their position deteriorates. Pastoral people, too, are usually warlike, and in war women invariably come to occupy an inferior position. They are also in the habit of enslaving and exploiting foreign women so that important differences arise within the sex itself. The correlation between the economic importance and the social status of women, however, by no means holds invariably, for economic factors are not the only social determinants. Thus in South Africa the inferior position of women among the hoe-cultivating Bantu, where they supply the bulk of the food, is in strong contrast with the liberty and good treatment which women enjoyed among the purely pastoral Hottentots.

With the development of culture conditions become complicated, economically by the development of wealth, socially by the growth of slavery and the incorporation of captured women, politically by stratification and the development of social classes. This brings about new forms of division of work among the sexes. Thus slaves are often made to do women's work, and are even made to wear their dress.

---

[1] Briffault, *op. cit.*, Vol. II, p. 183.

[2] Rivers, *Essays on the Depopulation of Melanesia*, p. 19.

[3] Sumner and Keller, *op. cit.*, Vol. I, p. 134.

In the higher phases of culture many of the specialized vocations pass to the men. For with the concentration of power and wealth in towns there comes a commercialized demand for industrial products of good quality. At the same time many of the opportunities for the men of making a living, and especially hunting and warfare, fall away. The division of labour therefore shifts. Greater skill and the expenditure of more energy is required in the performance of work. The imposition of dues on the individual families increases both the status and the responsibilities of the male, and induces him to take a more direct share in the production of those things from which an income can be derived. This brings the crafts within the range of his vision and his interest. They therefore become commercialized. Commerce, transport, agriculture, as well as numerous industries, become the work of men.[1]

Specialization within the same sex appeared early in human history, although in a very rudimentary form. It no doubt commences in the manufacture of the articles which lie outside the traditional means of gaining a livelihood. Such an industry, for example, was that of the stone-worker. That stone-working early became a specialized art is shown by the perfection of many prehistoric flints. Among the Australians some persons not only specialized in making stone tools, but even confined themselves exclusively to the production of one specific implement. The American Indians carried this specialization even further. They "seemed to have reduced the art of flaking to almost an absolute science with division of labour, one set of men being expert in quarrying and selecting the stone, others in preparing the blocks for the flakes."[2]

---

[1] "Technik," *Reallexikon der Vorgeschichte.*

[2] Sumner and Keller, *op. cit.*, Vol. I, p. 146.

As primitive industry is an empirical procedure performed within the home, the technique can be transmitted only by those who exercise it. Specialized skill thus tends to be retained within certain families and to be transmitted to kindred only. This is the case also with the magical practices associated with the correct performance of the work. These contribute further to perpetuating family monopolies, for only those in possession of the correct magic would dare to exercise the craft. Thus the simplest trades tend to become hereditary in certain families. Among the West African Pangwe this specialization is carried far beyond the conditions necessary for optimum efficiency with their technique and means of exchange.[1]

> The making of a simple appliance for carrying a child, consisting merely of two strips of leather sewn together, is already a special craft; while the craftsman who makes wooden spoons cannot make any wooden articles such as a spurtle. A stool-maker can only make stools, a maker of bows can only cut bows, and the one who makes the men's carrying baskets can make nothing else.

The same attitude sometimes restricts the manufacture of even the simplest articles to particular villages, at the cost of much inconvenience to the rest of the country. Thus among the Semas of Burma it is only in a few of the most westerly villages that the weaving industry is exercised. In the other places it is tabu. When in 1921 emigrants from these villages settled in an isolated part of the south, they were not allowed by the local communities to ply their craft, in spite of the obvious advantages of acquiring a local supply of cloth.[2] Owing to these magical notions and the family and territorial specialization which they produce, useful arts have sometimes disappeared in places which seemed best suited for their development. This has happened whenever the line of skilled craftsmen who exercised them became extinct. Thus the art of canoe building died out in the Torres Islands, and pottery-making in a number of Oceanian

[1] Thurnwald, *op. cit.*, p. 125.

[2] *Man*, XXIV (29).

communities. The degeneration of arts on this account is still more frequent.[1]

On account of the magical associations connected with the exercise of the crafts, the specialist occupies a peculiar position in his group. Sometimes he is honoured, sometimes despised, but invariably he is credited with the exercise of peculiar powers. Reverence and horror, in fact, both follow equally easily from the feelings of dread and awe, and the dual concepts of good and evil have a common origin.[2] Prestige is often connected with talent. Contempt for a calling, on the other hand, may be due to the dependence of craftsmen on the rest of the community for the means of subsistence, to the fact that they represent the members of a conquered and subjected people, or to the accidental effects of the division of labour. The useful arts are usually practised by peaceful people who are considered effeminate by the military castes, and are easily degraded to a lower level. Smiths especially are considered by savages as peculiar people. In Ancient Greece and Scandinavia they were connected with the spirit-world. Among the Fans the village blacksmith is likewise the priest and sacred headman of the community. By some of the Hamitic peoples of East Africa, on the other hand, as also by the Arabs and the Berbers, smiths are regarded with so much horror that they are completely banned from society.[3] A Masai oils his hands before taking up anything which a smith has held, in order to avoid contamination. He may slay a blacksmith with impunity, while even the accidental killing of a Masai by a pariah has to be atoned for by the death of several smiths. A justification for this attitude is not wanting. God forbade bloodshed, they say, and the blacksmiths by the weapons they make encourage men to transgress the divine commandment. Yet the whole organization of the Masai is based on warfare.[4]

---

[1] Rivers, *Psychology and Ethnology*, Part III, Ch. VI.

[2] Briffault, *op. cit.*, Vol. II, p. 359.

[3] Briffault, *op. cit.*, Vol. II, pp. 535–6.

[4] Lowie, *The Origin of the State*, p. 26.

The commercialization of economic relations is foreign to pre-capitalistic mentality. Services are objectivized still less than commodities in primitive societies. The payment of stipulated wage rates is therefore unknown. Even during the Middle Ages European minstrels who worked for money instead of honour and recognition were despised. There always remains in primitive societies a close personal relationship between employer and employé, outside which wage contracts have no meaning. Conceptions of reciprocity are deeply ingrained in primitive mentality, but they do not take the rationalized form of attempting to obtain the greatest return with the smallest expenditure. Goodwill, rather than conceptions of advantage, is the standard of conduct in question of remuneration. Payment generally conforms to status, to ability, and to need. It is usually in the form of a gift, which involves the honour of the donor, and is not subject to bargaining. Generosity is universally admired, and meanness despised. Among some primitive peoples special prestige is attached to the giving away of wealth. Thus in Samoa the building of a house usually commences with the prospective owner making a present to the skilled craftsman whose services he requires. The acceptance of the gift implies the willingness to enter into an agreement. The builders are provided with food as long as the work continues. If the food is not sufficient they refuse to continue, and no one is allowed to complete a work commenced by another. He who ventures to do so risks being robbed of his tools and thoroughly drubbed. Gifts are made at various stages during the construction of the house. The owner often impoverishes himself by making extortionate payments. But it is considered a great honour when it can be said of a man that he paid his workmen extravagantly. The value of a house or a canoe was therefore usually reckoned according to the amount of goods distributed to secure its construction.[1]

For the existence of specialization it is necessary that there shall be a regular demand for the products of the crafts, so that these can be exchanged for the necessities of existence. The primitive craftsman, however, is usually not entirely dependent on his craft for his means of subsistence. Either the members of his family work on the land, or he himself plies his trade only during the slack seasons in agriculture. Craftsmen occasionally exploit a limited market by wandering from place to place, working on raw materials furnished by their patrons. The existence of a regular market, or of a recognized medium of exchange, greatly facilitates the process of specialization. The concentration of power and wealth in towns, especially, creates a regular demand for articles of quality and facilitates the growth of occupational groups. These may consist of related families, of fraternities united on an ethnical basis, or of secret societies. They love to surround the exercise of their crafts with an air of mystery. Sometimes they live in special villages, parts of villages, or streets. In ancient Egypt they had an independent organization, paid their dues collectively, and had a peculiar social status. Such corporations are the primitive equivalents of the medieval guilds.[1]

---

[1] "Handel F," *Reallexikon der Vorgeschichte.*

The primitive division of labour, hampered as it was by magical associations, nevertheless exercised an important influence on the development of technique. For as the mind seems to be disposed of only a fixed amount of general energy, progress can be attained only by restricting the attention to specific activities. Civilization, in fact, has been due largely to the division among a large number of people of work formerly performed by a single individual.

---

[1] "Zunft," *Reallexikon der Vorgeschichte.*

CHAPTER X

SLAVERY

SLAVERY serves as a means for the division and the transfer of labour. It consists, according to Nieboer, in the fact that one man is the property of another beyond the limits of the family proper.[1] The legal position and economic condition of the slave, however, differ greatly in different societies. It is often very difficult, especially in Africa, where a very diversified range of attitudes towards slaves exists, to distinguish clearly between slaves, serfs, submerged classes, and low castes. Thus in southern Nigeria the children of slaves born in the country were among some peoples considered free, among others as half-free. Free men who placed themselves under the protection of important personages could be considered three-quarters free. There was therefore "every gradation between a full slave, for instance a stranger recently bought, and a free-born, independent citizen."[2]

Besides differences in the right of possession and of transfer, the distinction between the slave and the serf consists essentially in the fact that the relation of the former to his master is more direct; that of the latter being usually determined through the possession of land. The services of the slave are therefore absorbed more completely in the economic system of his master, on whose judgment his contributions and his welfare largely depend.

Slavery no doubt originated through the adoption of prisoners of war. Captives, instead of being tortured, eaten, or sacrificed, were adopted by their victors. This advantage was first accorded to women and children, and later extended also to men. It was by no means invariably an act of goodwill. "Remnant of the feast" was an opprobrious epithet applied by the Maori to a slave who had not even been worth eating.[1] Sometimes they were merely spared to be reserved for future sacrifice. The captive, especially if he belonged to a tribe of hereditary enemies, may be doomed to perpetual younger brotherhood. He would never become the head of a family, bear arms, have a voice in the government, or be reckoned among the full-grown men of the tribe, but be doomed to remain an inferior member of the community. Such a form of submission contains the germs of the institution of slavery. It is perpetuated by inheritance, for the children of slaves are usually also considered as unfree.[2]

---

[1] Nieboer, *Slavery as an Industrial System*, p. 30.

[2] Talbot, *Southern Nigeria*, Vol. III, p. 694.

Intra-tribal sources of slavery become important among the higher primitives. Bondage is often incurred as compensation for the breach of the law that would otherwise have incurred a blood feud, or for the non-payment of debt. Debts are often due to feasts being given for the dead. Gamblers, who are prevalent in the lower cultures, may adopt slavery as a pledge for the fulfilment of their obligations. Among some African peoples any theft, or even unimportant and unintentional damage to property, is sufficient to bring about the loss of liberty. Spitting on a man, or breathing in his face, or otherwise defiling him, or knocking out another's tooth, or failure to observe the traditional code of honour, is enough to entail slavery for life. Occasionally persons who are weak, poor, and unprotected will of their own accord embrace slavery. Need or prejudice may induce people to sell their children. It is said that in the twelfth century the English sold their illegitimate children to the Irish, and that the Breton laws gave a mother the right to sell her illegitimate offspring.[3] Among some savages the father has the right to sell his children. This privilege seems sometimes to be accorded even to the maternal uncle. Thus an African Negro remarked to Burton that he would never starve as long as his sister had children whom she could sell.[1] Occasionally a husband even has the right to sell his wife as a slave. Where the people are the property of the king, he may have the power to sell them, not merely when convicted of crime, but whenever they incur his displeasure.[2] Slavery is also imposed for religious as well as secular misdemeanour. Thus among the Sengirese of northern Celebes, "when a particular region is in mourning for anyone, any person using a parasol, wearing ornaments, or otherwise breaking mourning precedents, is made a slave. . . . If a man dies who was wont to fish at a certain place, that place is made tabu to his spirit, and anyone who fishes there is made a slave of the family of the deceased."[3]

---

[1] Thurnwald, *op. cit.*, p. 230.

[2] Nieboer, *op. cit.*, pp. 437–8.

[3] Thurnwald, *op. cit.*, pp. 222–8.

The necessity for the employment of forced rather than free labour depends, according to Nieboer, on whether the resources of a country are open or closed. In a community with open resources, and especially with free land, the means of subsistence are available to all. Labour, in such a society, is the most important factor of production, for any one with nothing but his own ability is able to make a living independently of the capitalist or the landlord. Free labourers, therefore, are not likely to offer themselves for employment; certainly not for the rude and uninteresting kinds of work. Skilled labourers may exist whose services are well remunerated, but a proletariat obliged to seek work is lacking. Unless therefore the necessary drudgery can be imposed on the female sex, men must be induced to work in such a society, and such compulsion usually takes the form of slavery.

Where all the free resources have been appropriated, conditions are different. People who are destitute of land or capital are obliged to work for the possessors of property. Slaves are therefore not necessary. For impersonal forms of compulsion to work are more likely to give the possessors of the means of production an increased share of the yield of labour than any form of personal constraint. Slaves may still be kept, but slavery as an industrial system is not likely to exist.[1]

---

[1] Hobhouse, *Morals in Evolution*, Vol. I, p. 288.

[2] Talbot, *op. cit.*, p. 700.

[3] Sumner and Keller, *op. cit.*, Vol. I, p. 243.

But even though it is the presence or absence of open resources which determines to a large extent whether free labour can be obtained or not, it does not follow either that slaves will invariably be kept where resources are open, or that they will disappear where the land becomes appropriated. For, on the one hand, an institution when once established tends to crystallize existing practice. Prestige becomes attached to the possession of slaves, and methods of organization and of subjection are not easily relinquished. On the other hand, primitive peoples may be ignorant of the institution. The distribution of slavery suggests that its spread has been greatly influenced by diffusion. Slaves are also sometimes kept for non-economic reasons. Thus in the head-hunting districts of Melanesia individuals were often brought home alive from expeditions and reserved to provide the "heads" needed for future occasions. They were not used to do compulsory labour, but were treated as natives, married the women of their captors, and performed those religious functions which were so sacred as to carry with them the element of danger. Such slaves could even rise to occupy the position of chieftainship.[2] In New Zealand slavery was related not merely to economic conditions, but to a "whole scheme of magico-religious ideas centring around food and its preparation, as well as in the complex set of customs and emotional attitudes relating to war."[3]

The existence of slavery depends also on whether forced labour can be profitably employed. This may not be the case where subsistence is difficult to acquire, where the work is of a very technical and skilled character, or where slaves would be difficult to keep. The existence of slavery therefore largely depends on the form and the state of development of primitive economy. Professors Hobhouse, Wheeler, and Ginsberg, taking all the cases in which the existence of serfs and slaves is asserted as fractions of the total number of cases belonging to each group of which they had information, tabulate the results as follows:[1]

---

[1] Nieboer, *op. cit.*, pp. 385 sqq.

[2] Rivers, *Psychology and Ethnology*, p. 297.

[3] Firth, *Primitive Economies of the New Zealand Maori*, p. 204.

Lower hunters	0·02
Higher hunters	0·32
Incipient agriculture . . .	0·33
Lower pastoral peoples . . .	0·37
Agriculture—pure	0·46
Higher pastoral peoples . . .	0·71
Highest agriculture	0·78

Hunting and collecting communities make little use of slavery. Very often the fact that such communities are surrounded by stronger peoples, by whom they are held in subjection, would exclude the possibility of keeping slaves. But even where this is not the case prisoners of war are often either killed or adopted.

The keeping of slaves, in fact, is difficult in a hunting society. Such communities live in small nomadic groups. The smallness of the group makes the introduction of any appreciable number of slaves a grave risk, whereas the nomadic character of their existence makes the supervision of the slaves almost impossible. Hunting, besides, is a noble and respected profession which only the free can perform. It requires the utmost application of strength and skill, work which is ill adapted to a compulsory system. Food, besides, is scarce. It requires all the energy of a man to maintain himself, and a slave will generally not be worth his keep. Slaves can as a rule only exist where subsistence is easy to procure without the aid of capital. To provide slaves with the means of hunting, besides, is to put them in the field again. Nor are men at that level of culture likely to procure slaves to relieve the women of part of their work. Female labour, in fact, serves as a substitute for slavery.[1]

---

[1] Hobhouse, Wheeler, and Ginsberg, *op. cit.*, p. 236.

The keeping of slaves is easier for a community which lives by fishing. The communities are larger and more sedentary, and there is more domestic work to be done. It is, besides, easy to control the man who works in the same boat with his master. Slaves were kept especially on the Pacific coast of Canada. The abundant supply of food, the high development of industry and commerce, as well as the favourable position of the women, were the main factors which accounted for the prevalence of slavery in this region.

Among pastoral peoples slavery as a system of labour is of little importance. Subsistence is dependent on the possession of cattle. These are the property of individuals, and those without them have to offer their services for remuneration in order to make a living. The existence of a poor class of free men therefore does away with the necessity of compulsory labour. The demand for labour, however, is small. There is little work to be done, and the men often spend a large part of their time in idleness. They are, besides, unwilling to entrust their valuable possession to slaves. The subjection of agricultural tribes and craftsmen sometimes serves as a substitute for slavery. This accounts for the fact that such a large proportion of the higher herdsmen in the above list is credited with holding serfs and slaves. The levying of tribute is much easier for a mobile people than the supervision of slaves. Where agricultural food cannot be obtained in this way, it is usually secured by true nomads either by the collecting of the women or by exchange. The ways of living of the herdsmen not only make slaves of little use, but their supervision very difficult. Slaves are, however, sometimes kept as a luxury. For their possession and submission are likely to gratify the pride of the rich in a community where the disposition over wealth is so highly valued. The keeping of slaves by pastoralists has been developed especially by the slave trade.

---

[1] Nieboer, *op. cit.*, Ch. II.

Slavery, on the other hand, plays an important part in the economic life of agricultural peoples, and its importance increases with the stage of agricultural technique attained. The proportion of slaves is often one-third of the total community, and occasionally it even exceeds the free population.

Among incipient agriculturists a large part of the food supply is still obtained by hunting and collecting. Hunting is the work of the men, the migratory cultivation is performed by the women. Such communities are small and partly nomadic, and the slaves are therefore difficult to control.

Among true agriculturists the position is different. The general character of their economic and social life favours the keeping of slaves. Subsistence is relatively easy to procure, and is not dependent on the existence of much working capital. Few implements and little skill are required. The work is monotonous, requiring patience and powers of endurance, rather than skill and initiative. Such work is admirably suited for women and slaves. A good hunter is always held in high esteem, but a man's influence never depends on his prowess in the jam patch. As the cultivated land in primitive society is seldom private property, and free land is usually available, free men are not likely to offer their services to others. The only alternative is to use forced labour. Besides, where the supply of land is limited and in private possession the most profitable ratio of labour to land is fairly fixed. But where there are practically unlimited resources of free land available a man can, by increasing his slaves, increase his income in proportion. Slaves, too, are easy to supervise in agricultural societies. They work with their masters, being usually treated as inferior members of the family, sharing in the welfare of the household, and therefore interested in the results of their labour. Primitive agriculture, moreover, not only facilitates the keeping of slaves, but no doubt also produces an outlook on life which facilitates the reduction to slavery of the people who practise it.[1]

The distribution of slavery is dependent also on the position of women. Where all the disagreeable work is performed by women slavery is not likely to be prevalent, for men are not likely to make slaves merely for their benefit. Australian and Melanesian women supply the place of slaves, and polygamy provides the means of increasing the resources of the chiefs. Where the men also take part in cultivation, on the other hand, as among many of the hoe cultivators of Africa, the bulk of the work tends to devolve on slaves. Where women occupy a favourable position, the men will be solicitous of relieving their wives from laborious work. Slaves, having lost their manly virtues, were free to perform many things forbidden to men. They are often set to do domestic work, and are sometimes even dressed in women's clothes. Where slaves become an important part of the community the slave owners, both male and female, may form a leisured aristocracy with practically nothing to do at all.

Commerce favours the keeping of slaves. It not merely spreads the idea of the institution, but facilitates the acquisition of slaves. Slavery, as Thurnwald points out, is an institution which is very easily adopted, for it chiefly affects strangers, and substitutes their work for native labour.[2] Occasionally, indeed, it is found in societies which do not seem to have come into contact with other slave-keeping peoples, so that it appears to be an indigenous growth. But the keeping of slaves to a very large extent coincides with the existence of the slave trade. Commerce provides an easy means of acquiring slaves. It both provides an opportunity of profitably disposing of prisoners and stimulates raids to procure them. The large majority of agricultural tribes who engage in commerce keep slaves. For those communities which engage in commercial pursuits require extra labour to produce the means of subsistence and the articles of trade. Trade, besides, develops wealth and luxury, and slaves are needed to supply both necessities and the comforts of life. The long distances from which slaves can be procured also prevents their escape, which considerably increases the coercive power of a people.

---

[1] Nieboer, *op. cit.*, Ch. IV.; Sumner and Keller, *op. cit.*, Vol. I, p. 229.

[2] Thurnwald, *op. cit.*, p. 233.

The treatment of slaves varies in different societies and with different individuals. Often also there is a fairly big difference between their legal position and their economic condition. Debtor slaves, and even hereditary ones, are, besides, invariably treated with more consideration than those obtained by trade or conquest. The free man who has become a slave in his own community retains certain rights, and especially the support of his family, who will protect him in case of cruelty. The chief danger to the slave is the fact that he is a solitary creature more or less at the mercy of a single individual.[1] On the whole, it seems that in primitive societies, because of the close personal contact existing between master and slave, and the lack of marked social distinctions, the position and material condition of the slave is not markedly inferior to that of his owner. It was with the development of production for the world market and the growth of the plantation system, that slaves of alien race came to be exploited mercilessly by the representatives of a higher civilization, whose only ambition was to get rich as quickly as possible.

Slaves are usually treated well, not merely for humanitarian reasons, but because they represent the most valuable property of their owners. It is therefore in the master's interest that his slaves should be happy and contented. They will also work harder and better for a considerate master, and there will be less inducement for them to try and escape. This is often comparatively easy, especially in tropical countries.[2] The slave debtors of the Dayaks are said to be just as happy and contented as free men, enjoying all the liberty of their masters.

---

[1] Rattray, *Ashanti Law and Constitution*, p. 42.

[2] Talbot, *op. cit.*, p. 693.

The South American Mbayás, according to Azara, show remarkable consideration for their slaves, never commanding them in an imperious tone, nor reprimanding, chastizing, or selling them, even when they happen to be prisoners of war. "What a contrast with the treatment which the poor Africans receive from the Europeans!"[1]

The social and political position of the slave is usually inferior to that of the free man. Very often, however, especially in Africa, little distinction was made between them in ordinary social life. Slaves often became adopted members of the family, and in the course of time their descendants so merged and intermarried with their owners' kinsmen that few would know their origin.[2] In many Nigerian languages the word for "master" and "father" is the same. The owner in that case calls his domestic slaves his sons. Among the Wabondei, when a man bought a slave he would call his children and say: "Behold your brother!" Female slaves were often married by their owners. There was, in fact, little difference between paying for a free wife and buying a slave. Where mother right prevails, the father may be more interested in the future of his children by a slave than by a free woman. For the latter would succeed to the property and position of their mother's brothers, whereas the former would have no such recourse.[3] It was therefore by no means rare for slaves to attain to the most powerful position in the family, for they would identify themselves more closely with the fortunes of their masters than the free-born of the house. Industrious and efficient slaves were often allowed to marry a daughter of the family and to succeed the master, even in preference to his own sons. Even members of the royal families in Nigeria were quite often married to slaves. The slaves of great Nigerian chiefs were more powerful than ordinary free men. Among the Kafirs of the Hindu-Kush slaves were sometimes elected to the magistracy.[4]

The power of the master over his slave is seldom absolute. Fairly often, indeed, the master seems to have had the formal right of life and death over his slave, although custom and self-interest would generally deter him from exercising his prerogative. But often this right is also expressly forbidden. The killing of an intra-tribal slave would, besides, expose the murderer to the blood-revenge of the victim's family. The murder of another person's slave was, however largely, if not always exclusively, regarded as an offence against the property of the owner. Where the system of blood-money prevailed, the price paid for the life of a slave was less than that paid for a free man. It was a widely distributed practice to let slaves accompany their master to the next world. Among some peoples, slaves were sacrificed to inter beneath the supporting posts of their masters' houses. The Indians of the north-west coast of America even destroyed their slaves merely to display their wealth.

---

[1] Westermarck, *op. cit.*, pp. 678–80.

[2] Rattray, *op. cit.*, p. 42.

[3] Hartland, *Primitive Law*, p. 112.

[4] Talbot, *op. cit.*, pp. 679–700.

Sometimes even the right of the master to punish his slaves is limited. Quite often he has not even an unlimited right to sell them. Several societies, especially in Mohammedan countries, permit a dissatisfied slave to change his master. In order to do this he merely has to inflict some damage to another person's property, by which act he automatically becomes the injured person's slave. In some African countries the ease with which slaves can rid themselves of neglectful or tyrannical masters is almost incredible. Occasionally they obtain the right by merely leaving their lord, it being assumed that the fugitive had been badly treated. More often they only obtain the privilege as the result of deliberate ill treatment.[1]

Among some peoples the master is not entitled to all the services of his slave. In Nigeria the slave was as a rule merely required to give a proportion of his income and his time to his owner. The share of his earnings which went to his master usually varied from a third to a half. The slave, if competent, might be left completely free to engage in commerce or to hire himself out as a labourer, the master merely sharing in the profits. Where the slave is allowed to hold property he is often allowed to buy his freedom. He may thus become a man of means, and, in his turn, become the owner of slaves. In Nigeria it was not uncommon for him to hold more slaves and to be better off than his master, who may be reduced to seeking his assistance.[1]

---

[1] Westermarck, *op. cit.*, pp. 677–8.

The institution of slavery in savage society has certain peculiar advantages. It leads to sparing the lives of prisoners who would otherwise have been killed. As against this, however, must be set the fact that the keeping of slaves by itself promotes raids and even organized warfare. Slavery also provides an easy method of dealing with criminals and undesirables, who would otherwise be a burden to the State. Imprisonment, in fact, is almost impossible in such loosely organized communities. This profitable method of disposing of criminals, on the other hand, encourages rather exaggerated conception of the sanctity of contracts. An even greater advantage is the fact that under slavery every individual is a member of a family organization, and is enmeshed in a system of reciprocal obligations. If therefore services are exacted from the slave, he is in turn protected, and is not turned out in times of distress, as under the wage system. Beggary and starvation are unknown under the slave system.[2]

From the point of view of production slavery is an important factor in disciplining a race to continuous work. Slavery, as a Negro pointed out to Lugard, was to Central Africa what steam power was to the Western World. Both were sometimes misused, but both had enormous creative power.[3] The slave system also frees part of the population from the necessity of performing manual labour which, with primitive technique, can be obtained only by means of social stratification. This provides a favoured aristocracy with the leisure to cultivate the interests necessary for intellectual progress and for the government of large, stable, and orderly communities. Such social differentiation is naturally not an unmixed advantage. The keeping of slaves is usually confined largely to the chiefs and principal men, because they get the largest share of the war booty. Where slaves are bought, only the rich can afford to pay the price. The ruling classes may become large slave owners and the common people come to hate these tools of the aristocracy. The free proletariat would tend to sink into a dependent class, for the presence of a submerged caste always tends to bring the lower levels of those above them down to their own social and economic condition. Many free men may be reduced to bondage for the non-payment of debt, or sell themselves into slavery in times of stress in order to be supported and protected by the propertied classes.

---

[1] Talbot, *op. cit.*, p. 694; Westermarck, *op. cit.*, p. 677.

[2] Talbot, *op. cit.*, pp. 695–6.

[3] Sumner and Keller, *op. cit.*, Vol. I, p. 231.

As against these rather doubtful advantages of slavery, there must be set several serious disadvantages. Although slaves were usually treated with consideration, the most unpleasant work naturally devolved on their shoulders. Thus it was said of the slaves of the Tlinkit that "these wretched men and women were compelled to do all kinds of menial work, such as getting wood, making fires, packing dead game, providing fish, carrying water, paddling canoes, and, in short, every species of drudgery."[1] Among the Maori the slave had no *tapu*. He was therefore set to do the degrading work of cooking and of bearing burdens.

> For some of the most vitally necessary tasks, then, the presence of the slave was essential; a chief might conceivably be surrounded with food, and yet starve if no slave were at hand. Hence the amusing situation which arose in those rare occasions in tribal quarrels of a not very serious nature, when one party succeeded in carrying off the women and slaves of the other. The warriors of the latter, bereft of all who could feed them, were obliged to sue for peace.[2]

---

[1] Quoted, Sumner and Keller, *op. cit.*, p. 225.

[2] Firth, *op. cit.*, pp. 202–3.

The most important disadvantage of slavery, however, was the general insecurity associated with the life of the slave. Usually he was treated with consideration, but there must have been numerous exceptions, especially where appeal to the chief or to the public was denied to him. The slave also stood in continuous dread of being sold by his master, thus not only being severed from his family, but transported into foreign parts. There was especially the danger to slaves that it was among them that persons destined for human sacrifice were generally selected, and substitutes offered in case of a blood feud. In Ashanti whole villages of slaves existed all the inhabitants of which were looked upon as a human reservoir from which sacrificial victims could be obtained. Finally, there were the supernatural dangers involved in the fact that slaves often received no burial, and that they would have to be slaves to their masters in the next world as they had been in this.[1]

---

[1] Talbot, *op. cit.*, pp. 696–7; Rattray, *op. cit.*, p. 42.

CHAPTER XI

TRADE

Trade is the product of the division of labour and of diversity in the distribution of raw material. Its extent in primitive society is determined by factors such as the individualization of property rights, the existence of money, the means of transport, and the extent of political authority and of public security.

Barter is carried on by the lowest existing savages. Its existence in palaeolithic times has sometimes been disputed. Strings of shells worn as ornament are indeed found from the Aurignacian Period at considerable distances from their centres of origin. Shells from the Indian Ocean are even found as far away as Switzerland. This suggests the existence of trade, but, on the other hand, the phenomena may be accounted for by migration.

Specialization in the crafts and trade definitely appeared in Europe in the Neolithic Age. The specialization was rudimentary in form, however, and the trade of little significance, and almost entirely restricted to the same culture areas. The development of specialized ability in the manufacture of flint tools was no doubt one of the first sources of outside contact. Already in the early Neolithic Age flint mines were worked fairly elaborately with galleries and shafts which seem to point to a production for exchange. Later the flint of the Danish islands was traded throughout the Baltic, north into Scandinavia, and as far south as Thuringia and Hessia. The amber of Jutland has even been found in the Swiss lake dwellings. Salt also became an important article of commerce in neolithic times.

Migrations seem to have played an important part in the development of early commerce in Europe. For the new area of settlement usually does not offer the immigrants all the commodities to which they were accustomed in their old home. They may therefore try to obtain these in return for the characteristic novelties found in their new home. Thus emigrants from the North Neolithic culture area were accustomed to wear amber ornaments. They therefore tried to obtain this material by exchange. Those who wandered south came across layers of varied coloured, striped flint. This pleased those who remained in the old home, and a trade arose in which amber was exchanged for flint. When groups of emigrants in the course of time develop into independent nations, such exchanges assume the form of international trade.[1]

The introduction of metals caused a brisk trade to arise, a trade which extended from one end of the European continent to the other. For metal when once known becomes indispensable for the manufacture of weapons, tools, and ornaments. Flint is very widely distributed, even though certain kinds are sufficiently restricted to have become the source of a more or less restricted trade. The metals, on the other hand, could be exploited initially, with a primitive technique and limited knowledge, in relatively few places. These places therefore became the centres of distant trade. The number of common types which have been found over wide areas, as well as the distance at which articles have been found from their centres of origin, testify both to the intimacy and to the wide extent of European trade in the Bronze Age. But the volume of this commerce, far as its tentacles no doubt reached, remained a mere trickle of goods, insignificant in comparison with that which was carried on at the time in the Near East. Here the growth of towns and the smelting of metals gave a great stimulus to trade. Egypt, Sumer, and the cities of the Indus demanded large quantities of timber, stone, and ore, as well as spices and precious stones, for the construction and adornment of temples, tombs, and public buildings.

---

[1] "Handel A," *Reallexikon der Vorgeschichte.*

Seals have been found in pre-Sargonic sites in Mesopotamia which derive from the Indus valley. This reveals the existence of extended trade relations and of the instruments of commercial negotiation five thousand years ago.[1]

Primitive trade is usually carried on on a very restricted scale. Examples are indeed found where groups carry specialization in the crafts to such an extent, that they obtain the greater part of their means of subsistence from outside by means of exchange. Thus in Mashonaland whole villages make iron exclusively and exchange the metal for the means of existence. Villages of potters are found in Africa, Melanesia, and South America. But such cases are rare. Examples are also found where commodities are carried considerable distances from their centres of origin, the goods being as a rule passed from tribe to tribe. Thus the Reindeer Chuckchee formerly used to sell European goods to the Asiatic Eskimos, who again transferred them to the islanders of the Bering Sea. These in turn disposed of the goods along the American coast, from where they were carried to Point Barrow and the Mackenzie.

> The East Greenlanders journey around to West Greenland to get snuff, and will consume four years in a single excursion there and back. Nansen says that they often remain no longer than an hour at the trading station and then take up their homeward march.[2]

The volume of primitive trade is restricted by the inadequacy of the means of transport. Carriage by water is the easiest means of conveying goods in savage societies. But because of the inefficient character of the craft and the relatively large number of men necessary to handle them, the freight carried must necessarily be small. The long time taken by voyages and the seasonal character of transport make the turnover even more insignificant.

Primitive trade is also confined within narrow limits by the smallness of the disposable surplus and the collective character of much of primitive property. Even titles to the possession of goods which are recognized as private property can sometimes be transferred only subject to the consent of the other members of the group. Collective property, on the other hand, is occasionally traded by a rather complicated mechanism. Free alienation among the lower primitives is confined, as a rule, to articles manufactured by the owner. To such articles, however, subjective values are attached which interfere with their free exchange. For work produced by hand with inefficient tools, the construction of which takes a long time, comes to reflect and partake of the personality of the producer. Such objects are often considered so much a part of the maker that they are inalienable, and at death are buried with him. The verb "to sell" corresponds to words in various ancient Teutonic languages which imply the making of a sacrifice.[1]

---

[1] Childe, *The Bronze Age*, pp. 38–41; *The Most Ancient East*, pp. 284–5.

[2] Mason, *Primitive Travel and Transportation*. p. 578.

It is on account of these subjective attributes attached to objects, that certain articles can sometimes be exchanged for specific other objects only. Food can be exchanged with some peoples for food only, iron hatchets for stone hatchets, taro for tobacco. The objectification of goods comes slowly through increased specialization, wealth, and the frequency of exchange, factors which loosen the ties attaching the workman to the objects of his craft.[2]

Primitive trade mostly takes the form of the friendly exchange of gifts. It has even been asserted that the obligation of accepting a present and of returning the equivalent is the fundamental principle underlying all primitive trade.[3]

The exchange of gifts is part of a system of reciprocity, of mutual give and take, which pervades all primitive economic relations. It is a fundamental principle attached to the gift that under certain circumstances it must be made, that the refusal to accept it is considered an offence, and that a counter gift of at least equal, but whenever possible of more than equivalent, value must be given in return. The gift fulfils social as well as economic functions. It not merely facilitates mutually advantageous exchanges, but creates goodwill, and enables the donor to satisfy his vanity, to maintain his prestige, or to affirm his superiority. In appearance the gift is always free and spontaneous. Any request is complied with, no haggling is allowed. In fact it forms part of a system of socially determined mutualities. In their economic relations savages usually display a keen, if subdued, self-interest. Services are "mentally ticked off, and in the long run balanced."[1] Presents are nicely graded according to the ability of the recipients to make a return.

---

[1] Burns, *Money and Monetary Policy in Early Times*, p. 2.

[2] Hoyt, *Primitive Trade*, pp. 82–9.

[3] Mauss, "Essai sur le Don," *L'Année Sociologique*, Tome I, 1923–4.

The sanctions which induce the savage to meet his obligations, and to fulfil them scrupulously, are threefold. Economically, the failure to reciprocate removes all possibilities of exchange and makes his position intolerable. Socially he suffers a loss of prestige and is covered with ridicule. Lastly, there is a supernatural sanction, for the failure to reciprocate makes it possible for the recipient to be subjected to witchcraft through the presents he has acquired.[2]

Sometimes the gifts form part of a well-organized system of exchanges, at other times they are casual and spasmodic. In the Trobriands, individuals in the coastal villages have definite partners in the inland villages, with whom they exchange fish for agricultural produce. Among the Pangwe of West Africa, on the other hand, with whom trade is carried on by means of presents given during friendly visits, any sort of connection, even a slight acquaintance, is sufficient excuse for an unannounced visit. Among the Kpelle even real business journeys are often conducted under the guise of friendly visits, and the exchange of goods carried on in the form of an exchange of presents.[3] The trade of the Indians who formerly lived on the south-west side of the Missouri has been described as follows:[1]

---

[1] Malinowski, *Crime and Custom in Savage Society*, p. 26.

[2] Firth, *op. cit.*, p. 411.

[3] Thurnwald, *op. cit.*, pp. 150–2.

> Their mode of trading with each other is perfectly primitive. There is no bargaining or dispute about price. A nation or tribe comes to a village, encamps near it, and, after demonstrations of a thousand barbarous civilities on both sides, as sincere as those which are the result of refinement, one of the parties makes a general present of all such articles as it can conveniently spare. The other a short time after makes in return a similar present. The fair is then concluded by a variety of games, sports, and dances. They hold the mode of trading by the whites in great contempt. They say it displays a narrow and contemptible soul to be weighing and counting every trifle.

Hospitality is in this way made to serve the purposes of trade. The gifts are made in a liberal and spontaneous manner, and any form of haggling or bargaining is considered incorrect. A tactful hint conveys a notion of what is desired in return. Praise of an article is sufficient for its immediate transfer. Each party to the transaction is as a rule acquainted with the needs of the other. Each tries to give what the recipient cannot procure at home, and tries to give as many different articles as possible. Often there is a lag between the acceptance of a gift and its repayment, until the recipient is able to get suitable presents in return.

Sometimes the exchanges are of a purely ceremonial character, objects of precisely the same type or even the identical goods being returned. The exchange of such ceremonial presents is very widely distributed among primitive peoples, and seems to have prevailed formerly in parts of Europe. Its most dramatic expression among modern savages is the Kula trade of the Trobriand islands. In this trade bracelets and necklaces circulate between definite partners in a prescribed rotation within a closed orbit. Elaborate expeditions are fitted out with much ceremonial to enable the continuous circulation of these articles, which serve not as personal ornaments or permanent possessions, but rather by the knowledge of their temporary acquisition to satisfy the need for ostentation and display. The objects derive their value from symbolic and historical associations rather than from their beauty or intrinsic value.[1] The Polynesians also undertook long voyages to exchange objects of little intrinsic value. Adventure, prestige, and ceremonial, rather than gain, were the dominant motives in the promotion of these expeditions.

---

[1] Mason, *Primitive Travel and Transportation*, pp. 587–8.

Primitive trade does not always, however, assume this peaceful and friendly aspect. It is in fact often associated with plunder rather than with peace. The trade in war plunder, and war as a motive to obtain goods for trade, seem to have flourished in prehistoric Europe. Caesar writes of the Suebi that they allow merchants to enter the country much rather with the object of disposing of the goods they had plundered than from any real need for foreign goods. There were also other methods, however, of disposing of the booty. Thus Caesar writes of the Gauls and Tacitus of the Hermunduri that in the case of victory all the spoils were sacrificed to the God or Goddess of War.[2] It was the failure to observe this ancient custom which brought the wrath of Yahweh on the head of Saul.[3]

On account of the numerous dangers which beset the trader in savage societies, external trade is usually carried on in the form of expeditions. Collective expeditions are organized even by the lowest primitives to obtain the few articles needed from outside. According to Mason,

> The very simplest form of commerce on the western continent does not seem to have been in the hands of peddlers; but certain necessary articles like salt and other minerals existed in mines or quarries situated inside the boundaries of certain tribes. The owner did not dig the material and carry it about to sell or exchange it, but the people who wanted the article had to go after it and pay some kind of tribute for the privilege.[4]

[1] Malinowski, *Argonauts of the Western Pacific*, Ch. III.

[2] "Handel A," *Reallexikon der Vorgeschichte*.

[3] 1 Samuel xv.

[4] Mason, *op. cit.*, p. 586.

The famous "red pipe-stone quarries" were held as sacred and neutral ground by all the Indian tribes, who gathered there to procure the valuable stone. The Central Australian Dieri used to organize an expedition each year to obtain the red ochre with which they paint their bodies, an article valued both as a charm and as a marketable commodity. The source was no less than 500 kilometres away. As such expeditions were dangerous, they were undertaken by at least seventy to eighty men fully armed under capable leadership. Their return was celebrated with great festivities. The material was either removed freely, taken by force, or, when the power to be overcome was too formidable, other articles were offered in exchange.[1]

Even where external trade is carried on by individual enterprise, merchants usually prefer to proceed in company in order to obtain greater security against the dangers of the road, and to meet collectively the exactions of the rulers through whose territories they pass. That prehistoric traders in Europe followed this method is shown by the large hoards of goods which have been unearthed, and which were no doubt buried in times of approaching danger. For these hoards are found usually along natural routes, and most frequently in danger zones, such as the frontier of two cultural provinces.[2] The way in which such expeditions proceeded can be imagined from the description given of similar undertakings at the beginning of the Middle Ages.[3]

Trading expeditions play an important part in the economic systems of some primitive communities, especially in those of Melanesian and Polynesian peoples. Thus the Motu people of eastern New Guinea undertake annual journeys, when the south-east monsoon breaks, to the river mouths in the gulf of Papua. Their canoes are laden with pots, carefully wrapped in banana leaves, and with articles of ornament. They return with the north-east monsoon after an absence of approximately three months, laden with sago, which they had obtained in exchange for their own wares.[1]

---

[1] Thurnwald, *op. cit.*, pp. 145–6.

[2] Childe, *The Bronze Age*, pp. 44–5.

[3] Cf. Pirenne, *Les Anciennes Democraties des Pays-Bas*, p. 30.

Aztec merchants used to travel in large groups accompanied by porters carrying the merchandise of the plateau, which was exchanged for the tropical produce of southern Mexico and Guatemala. The time of starting and of terminating an enterprise was timed to fall on lucky days. Merchants disguised themselves to resemble the natives among whom they traded, and spoke their languages fluently. They incurred grave risks, for if their disguises were detected by hostile peoples they were summarily executed.[2]

In parts of Africa, largely owing to Arab influence, trading expeditions assumed an elaborate character. They illustrate well the numerous hindrances which impede the development of primitive trade. Thus in Loango the people of the coast who organized expeditions into the interior had to face numerous exactions from the rulers through whose territories they passed. Negotiations and haggling preceded the entry into each district. If the transit dues demanded were too high the caravan threatened to choose another route. Those districts which lay along the most frequented paths were able to exact the most oppressive taxes. Caravans often tried to evade these dues by choosing by-roads. Movement by night was therefore prohibited, and watchmen were posted at the entrance to each territory to prevent evasion.[3]

The expeditions of the Swahili were accompanied by elaborate preparations, all sorts of omens being observed and oracles consulted. The goods were obtained on credit from a merchant by the organizer of the caravan. In the interior of Africa cloth, metals, and beads were exchanged for ivory and rubber. The expedition usually lasted from one to two years. On its return it was given a festive welcome. This was followed by the settling of accounts with the merchant, which often ended in a quarrel.[4]

---

[1] "Handel F," *Reallexikon der Vorgeschichte.*

[2] Thompson, *Mexico Before Cortez,* pp. 127–9.

[3] Thurnwald, *op. cit.*, p. 156.

[4] Thurnwald, *op. cit.*, pp. 142–3.

Trading expeditions are often exploited, but their methods are sometimes not more respectable. The roles of trader and pirate are easily interchangeable, according to circumstances. The ratio of exchange between trading groups may be fixed on the basis of arms and numbers, rather than on the merits of their respective wares. Caravans are always fully armed. Occasionally, if they happen to be the stronger side, they plunder and reduce to slavery their unsuspecting clients. Only if they happen to be the weaker side, or their clients well advised, do they resort to more reputable methods of trade. Such methods were frequently adopted by the Arabs, but were not peculiar to them. The Phoenicians and Scandinavians, too, were quite willing to get something for nothing by looting prospective customers. Nor were these methods unknown to Europeans at a much later date.

On account of the facility with which commerce degenerates into plunder, it is no wonder that weak and timid peoples resort to methods of exchange which have been designated as "silent trade." The objects to be bartered are laid down in a determined spot by people who withdraw, after giving an accustomed signal. The other party to the transaction then appears, deposits its wares next to those already exposed, and in its turn withdraws. The first party now returns, and either removes the objects given in exchange, in which case the transaction is closed, or leaves the objects to be changed or added to, or removed in their turn. In this way by silent haggling the bargain is concluded.

This peculiar method of exchange has been found all over the world, and is very old.[1] According to Herodotus, it was used by the Carthaginians in their trade on the west coast of Africa.[2] In far the largest number of cases it is resorted to in relations between peoples standing on very different levels of culture, and is obviously inspired by the fear of the weaker for the stronger group. Where the parties are of equal strength it may sometimes be resorted to for convenience. The one party, not knowing when the other will pass along the regular route, may prefer to leave their goods exposed rather than to wait. It is doubtful if silent trade would be resorted to by relatively civilized communities merely from a dislike of intercourse with foreigners. According to several Latin authors the Chinese are indeed said to have used it in their trade with the Western world. These writers were probably, however, merely ascribing to the Seres commercial practices which they had heard were customary among the barbarians on the frontiers of the Empire.[1]

---

[1] Cf. Grierson, *The Silent Trade*, pp. 41–2.

[2] Herodotus, *Works*, Bk. IV, Ch. 196.

Silent trade requires customary places where the wares can be exchanged. That such places sometimes developed into regular markets is suggested by the fact that markets are often held at a distance from the village in a sheltered place. Among the Kpelle, who until recently exchanged their wares in this way with the Gola, the word for a market signifies a bush.[2] The market, indeed, seems to be of very diverse origin and to have developed in response to the needs of primitive trade.

As the savage finds it dangerous to venture into neighbouring territory, places of exchange are often arranged at the frontiers of different communities, on neutral ground. Such exchanges are attended by a number of able-bodied men, fully armed, for they frequently end in a dispute. Passarge describes a scene on the Upper Benne, in central Sudan, where the Munchi had brought skins and meat to exchange for the fish and grain of the Jukum. Every man stood with arms drawn before his treasures. The Jukum were in their canoes ready to push off. If the alarm is given the Munchi rush into the bush, the Jukum escape in their canoes, arrows and curses fly to and fro, and the parties scamper home, leaving a few dead on each side.[3] When two parties of Brazilian natives meet to trade they mutually lay their weapons aside. Then, the exchange being concluded, certain words are repeated several times by both parties, and both sides seize their weapons simultaneously.[1] The trade between the Chuckchee and the Eskimos was conducted by armed men, who handed the bartered objects to one another on the tips of their spears.[2] The up-country natives in North Borneo still come to market fully armed, although they are obliged to deposit their weapons with a policeman outside.[3]

---

[1] "Seres," *Paulys Real-Encyclopädie der Classischen Altertums-Wissenschaft.*

[2] Thurnwald, *op. cit.*, p. 150.

[3] Thurnwald, *op. cit.*, p. 164.

The assembly of a large number of people at feasts, religious festivals, or initiation ceremonies, on the other hand, forms the occasion for an exchange of gifts and for barter, even among hunting and collecting peoples. Among agriculturists markets are associated especially with rest days.

A market tends naturally to come into existence whenever neighbouring peoples have goods to exchange and the willingness to exchange them. The market place is originally in some neutral district on the tribal borders, where all hostilities must cease. In process of time the increasing friendliness between communities makes it possible for the market to be held in the different settlements according to a definite and well-known sequence. With the regular market is inseparably connected the market week, the length of which varies from three to ten days. The shorter intervals of three, four, and five days reflect the simple economy of primitive life, since the market must recur with sufficient frequency to permit neighbouring communities, who keep on hand no large stocks of food and other necessaries, to obtain them from one another. The longer cycles of six, eight, and ten days, much less common, apparently arise by doubling the earlier period, whenever it is desired to hold a great market for the produce of a wide area. That the recurrence of the market determines the length of the week is made obvious by the practice of naming the several weekdays from the markets that take place on them. Thus there comes into existence a definite and recognized cycle of time, shorter than the lunar month and in origin unconnected with it, a true periodic week, running continuously from month to month, and from year to year.[4]

---

[1] Sumner and Keller, *op. cit.*, Vol. I, p. 154.

[2] Schmidt, *Grundriss der Ethnologischen Volkswirtschaftslehre*, Vol. II, p. 143.

[3] *Man*, 1915, 12.

[4] Webster, *Rest Days*, pp. 117–18.

The market day necessarily has the character of a rest-day. Those who attend have to abandon their usual occupations. It is a holiday affording opportunities for social intercourse, sports, and amusement.[1] Of the Bakongo it is said that "as in Ireland everybody goes to market whether he has anything to buy or sell or not. All talk, nobody listens."[2] The Aztec markets were frequented mostly by women, who combined business with pleasure, meeting their friends and indulging in gossip. Father Duran, an early priest, makes the following comment on the love which these women find in visiting the market.

> I think that if one was to say to one of those Indian women who love to wander round the markets "Listen, to-day is market day in such-and-such a place, which will you to choose, to go straight to heaven or go to the market?" I suspect that she would say, "Let me first see the market, and after that I will go to heaven."[3]

Markets can be distinguished from fairs. Fairs are held at fairly long intervals, usually in connection with festivals, and are a means of carrying on external trade. Men play an important part in them, for distant trade is usually in their hands. Markets, on the other hand, are smaller and more local in character. They are held at close intervals, often in remarkable proximity to one another. Women play an important part in them, for they usually monopolize the smaller trade.

Markets play an important part in the economic life of the higher primitives. They are especially common in parts of Africa and in Melanesia. Over most of South America, on the other hand, they were of little importance. In Mexico there were markets which specialized in different products. Cholula was the centre for precious stones and feather-work; Texcoco for textiles and decorated gourds. Acolman had a great dog market; Azeapotzalco and Izocan specialized in slaves. In the great central market of the city of Mexico, according to Cortes, sixty thousand persons assembled daily.[1]

---

[1] Webster, *op. cit.* p. 118.

[2] Hoyt. *op. cit.*, p. 120.

[3] Thompson, *op. cit.*, p. 130.

Precautions are often taken to ensure the peace of the market. Armed men may stand in the background, while the women are conducting the exchanges. It is sometimes laid down that publicity must attend all sales and contracts. In the markets of Africa and Polynesia there are officials who see that justice is maintained. In Mexico there existed a market court of twelve judges to ensure the maintenance of justice. It was the New World counterpart of the courts of pie powder which existed in the medieval fairs of Europe.[2]

Primitive trade, even distant trade, is largely a casual occupation, undertaken by the producers who dispose of their own products. The Indogermanic language, which was the language of a part of the neolithic population of Europe, had words for purchase, barter, and price, but none for the professional merchant. Even middlemen, who sell goods they do not themselves produce, at first usually carry on their trade only during the slack season in their regular occupations. Among small neighbouring tribes, or in stratified societies, one class or tribe may obtain the position of intermediary and become an hereditary caste of traders. Trade is often monopolized by the distributing authority in communities with a strict system of distribution. A people on the coast sometimes monopolizes the transit trade with the hinterland. Timid peoples make use of one of their own tribes, or representatives of a superior people, to exchange their products for those of the outside world. In these ways a regular class of merchants may develop in the course of time.[3]

Great differences in commercial aptitude exist even between neighbouring peoples. There is no "natural propensity to barter," as Adam Smith maintained. For although a keen self-interest in their affairs is displayed by all normal persons, this interest takes different forms with different peoples. Some savages look down on haggling with contempt, whereas others enjoy it as a game. The American Indians on the whole showed little inclination for trade. They regarded the haggling of the Europeans with contempt. The Incas had a developed economic system without money or even competitive trade. Among the Aztecs, on the other hand, trade was highly developed, and the merchants formed an important and privileged caste. The Samoans had little trade, and their exchanges were carried on almost exclusively in the form of the gift exchange. The people of New Britain, on the other hand, who represent a lower stage of cultural development, had regular markets, trading expeditions, a developed commercial vocabulary, and perhaps the most developed monetary system to be found in any primitive society. The people of the lower Congo, it is said, will haggle half a day over a trifle, and then give away more than half its value, and they will ruin themselves with liberality rather than be considered mean.[1] Many Negro merchants in South Nigeria and the Gold Coast are willing to assume big risks.[2] To the South African Bantu, on the other hand, the idea of living by trade is abhorrent.[3] The merchant, for the Herero, is always a deceiver. The early Greeks applied vituperative epithets to all Phoenicians. In the German language there is a close connection between the words *tauschen* and *täuschen*, *Handel* and *Händel*.[4] The persistent complaint in the Western world that trade is overstocked is motivated largely by the idea that the merchant is unproductive, and that middlemen should therefore be reduced to the smallest possible number.

---

[1] Thompson, *op. cit.*, p. 129.

[2] Hoyt, *op. cit.*, pp. 149–50.

[3] "Handel," *Reallexikon der Vorgeschichte*

Trade has important cultural effects. It makes possible the growth of specialization and facilitates the development of technique. It especially had important effects on language, either developing a jargon of its own, or greatly increasing the currency of one used by a trading community. Examples of the adoption of a general commercial language are the use of Malay in the Indian Archipelago, of Guarani in Paraguay, of Hausa in the Sudan, and of the Tschinuk jargon in north-west America. Among the small, independent, and often hostile groups, speaking mutually unintelligible languages, which constitute the primitive world, trade must therefore have been one of the most potent forms of the diffusion of culture.

---

[1] Hoyt, *op. cit.*, pp. 140–4.

[2] Harris, *Dawn in Darkest Africa*, p. 49.

[3] Lestrade, *South African Journal of Economics*, Vol. II, No. 4, p. 441.

[4] Sumner and Keller, *op. cit.*, Vol. I, p. 155.

CHAPTER XII

MONEY

PRIMITIVE trade is carried on largely by barter. The small communities in which the lower primitives are organized are almost entirely self-sufficing. The few articles required from outside are obtained usually by the direct exchange of certain favoured commodities in traditional quantities.

Conditions change with the growth of specialization and the increased dependence of the individual families on external resources. Specialization makes the direct exchange of commodities more burdensome because it increases the difficulty of finding a partner who both wants the article offered and is able to supply the goods desired in return. As an example of these difficulties may be quoted the experience of Commander Cameron at Kawélé:[1]

> To obtain boats to proceed on my Tanganyika cruise was my first consideration. . . . I discovered a good one belonging to Syde ibn Habib. . . . Syde's agent wished to be paid in ivory, of which I had none; but I found that Mohammed ibn Salib had ivory, and wanted cloth. Still as I had no cloth, this did not assist me greatly until I heard that Mohammed ibn Gharib had cloth and wanted wire. This I fortunately possessed. So I gave Mahommed ibn Gharib the requisite amount in wire, upon which he handed over cloth to Mohammed ibn Salib, who in his turn gave Syde ibn Habib's agent the wished-for ivory. Then he allowed me to have the boat.

The development of markets to a certain extent obviates these difficulties by serving as commodity exchanges, thus increasing the number of possible intermediaries to a transaction, if only by continuing the exchanges until the objects desired are obtained. This can be done with least risk and trouble by exchanging the article first against some universally desired commodity, which can be easily disposed of and circulated again. In this way the disposition over immediate or reserved purchasing power would be obtained. Such objects must be easily stored; they must have a fairly high specific value so that they can be easily transported; and they must be uniform and easily divisible, so that they can be utilized also for smaller payments. The articles which best fulfil these requirements naturally differ considerably in the different stages of culture.

---

[1] Cameron, *Across Africa*, Vol. I, pp. 246–7.

Some objects used as money in primitive societies, it is true, possess the power of transferability to only a limited extent, not merely on account of physical disabilities, but especially because of subjective associations which restrict their use to certain specific transactions. Thus in Bechuanaland cattle could not be bought for tobacco, which was the general medium of exchange, but could be exchanged only for iron and tools. In parts of West Africa gold could not be exchanged for glass beads or tobacco, but only for cloth, salt, or amber. In the Solomon Islands and in the Bismarck Archipelago shell money is used only for the purchase of a wife, for the payment of allies in war, and for the wergild. In Rossel Island the *Dap* money may be used by the men alone and for the purchase of certain things only. One special denomination of the money is used to pay for wives, concubines, and pigs, and when it "passes from person to person it is handled with great reverence, and a crouching attitude is maintained."[1] "It is significant," says Rivers, "that the term for the money of Melanesia often means 'Sacred.' It is clear that in Melanesia generally, as in the Trobriands, the primary meaning of the objects we class with our money is religious or magical, while its more strictly economic use is a subsidiary function."[2]

Many objects, such as cowries and metals, were worn

[1] Hoyt, *op. cit.*, pp. 85–6.

[2] Rivers, *Psychology and Ethnology*, p. 295.

as amulets long before they were used as currency. Laum has maintained that the monetary functions of all the objects utilized as means of exchange and standards of value before the introduction of coins originated from their use for religious purposes. In the case of some of the objects mentioned by him, however, the historical sequence seems to have been the exact reverse. Thus, according to Laum, the evolution of cattle as a standard of value originated from its use as a means of sacrifice. "Cattle were used to pay sacrificial fees to the priests because they were the form in which sacrifices were made to the gods. . . . In this way, the norm evolved in religious affairs was translated into private trade. The medium that served as a medium for payment in respect of services in religious matters was also known and used as such in private trade."[1] Among herdsmen, however, values are likely to be expressed in terms of cattle in ordinary everyday transactions long before a unit would be required for religious purposes. The older forms of money are then often maintained for religious functions after they had ceased to be used in trade. Thus after the Czechs had introduced coins, they continued to use cattle for the wergild. Temple gifts among the Jews had to be paid in kind, and those who brought their tithes in the form of money were obliged to purchase goods for presentation. It has always also been customary to offer up in the temple old and obsolete objects which had ceased to please their owners.[2]

Subjective associations attached to a currency are very frequent in primitive society. The more, however, that a medium of exchange becomes associated with certain specific goods only, the less well does it serve the functions of a true money. The development of a true currency, on the other hand, tends to objectify the articles which are purchased with it. It does this both by facilitating the number of exchanges which are made in a society, and by referring all values to a common standard. This shows clearly how closely the two main functions of money have been connected, and how impossible it is to determine which of the two came first in the course of the long development of currency.

---

[1] Laum, *Heiliges Geld*, p. 43.

[2] Hoyt, *op. cit.*, p. 86; Burns, *Money and Monetary Policy in Early Times*, p. 27.

The most varied articles have at different times and in different societies served as mediums of exchange and as standards of value.

Among primitive peoples a universally desired object of possession is food, and the most varied kinds of durable food have served as money in different parts of the world. Salt has served, and still serves, the purpose over large parts of the world. Sometimes it is made up in bars or commercial packages of standard form and size, which in China, according to Marco Polo, bore the stamp of the State. It was paid to Roman proconsuls and propraetors in set quantities as *salarium* or salary. Pressed tea in commercial parcels served as currency among the Mongols and Tartars. Medieval taxes were payable in honey. Cocoa was used in Mexico; rice in China, the Philippines, and in Further India; dates in the Sudan; millet, measured in the palm of the hand, in Somaliland. Tobacco has served the purpose over a large part of the world, and was still acknowledged, along with maize, as legal tender by Maryland as late as 1732. That food was similarly used in Europe can be seen from the names of European coins. Thus in Brandenburg up to the fourteenth century the coin *frustum* meant a definite quantity of provisions. The French *denrée*, meaning provisions, is derived from an old French coin, the *denier*, which in turn was derived from the Latin silver coin, the *denarius*. The *fisk* (fish) has remained one of the coins of Iceland. Until 1793 beer was used as a standard for the payment of fines on the Lower Elbe. Customs duties at Basle in the Middle Ages were paid in pepper. After the sacking of Babylon by the Hittites, silver served as a standard of value, although it was used much less frequently as a medium of exchange, payments being made as a rule in corn, and less frequently in slaves, animals, weapons, and garments. During the post-War inflation in Germany it was suggested that grain should be adopted as the unit of value.[1]

Cattle, and to a lesser extent sheep and other animals, have served as currency almost all over the Old World. They form the wealth of herdsmen to which all other values are referred. Their use as a medium of exchange is connected with obvious disadvantages. For overseas trade they are practically useless. Even for local purposes their value makes their use for small transactions impossible. In Homeric times oxen were kept mainly by the wealthier classes, the poorer people possessing only goats and sheep. Oxen were therefore used for the more important settlements, and served especially as a standard of value, even when the actual payments were made in a different currency. Cattle are relatively stable in value among primitive peoples, who attach more value to numbers than to quality. When, with the growth of culture, a more exact standard is required, a "standard ox" of stated age is fixed as a unit of value. Thus Charlemagne, in his dealings with the Saxons, defined the value of a *solidus* as equal to the value of an ox of a year old of either sex in the autumn season, just as it is sent to the stall.[2]

The use of oxen as currency is very old. In the Homeric poems values are continually expressed in terms of oxen, though payments are usually made in implement money. Thus the arms of Diomed are valued at nine oxen, a woman slave skilled in industry is worth four. Laërtes pays the Eurykleia with treasure valued at twenty head of cattle. A cargo of Lemnian wine is bought by the Greeks besieging Troy for cattle and hides. The fines fixed at Athens towards the end of the seventh century were stated in cattle. In the time of Aeschylus, during the fifth century B.C., a man whose silence was bought was said to have "an ox on his tongue." The Aryans of India during the sixth and seventh centuries B.C. also used cattle and sheep as units of value. In ancient Persia payment in cattle and sheep was common. Among the first inhabitants of Italy the full-grown cow was the principal standard of value. The Tarpeian law of 452 B.C. provided for the first time for penalties fixed in cattle to be paid in pieces of copper.[1]

---

[1] "Geld," *Reallexikon der Vorgeschichte.*

[2] Burns, *op. cit.*, pp. 10–12.

The ox unit of currency is important in the history of the development of money because the value of many metallic coins seems to be derived from it. Ridgeway has maintained that the weights of the first gold monetary units represented the value of a head of cattle. Whether this be true or not, as cattle came to be slowly displaced by metallic money, the ratio between the value of the new and that of the passing currency was legally fixed by the State. Thus in Delos two drachmas were fixed as the equivalent of one head of cattle. Representations of cattle appear on many coins issued in Greece, Asia Minor, and central Italy. This suggests that these coins superseded an ox unit. The names for coins and monetary transactions are sometimes derived from words relating to cattle. Thus the Latin *pecunia* is derived from *pecus*, and "peculation," as a designation for public theft, has the same origin. The English "fee" and "feudal" and the Indian "rupee," all derived from words signifying cattle, are a further testimony to the widespread use of cattle as currency.[2]

Numerous useful objects have also served as currency. Mats serve the purpose in Samoa. Skins and money are equivalent terms in some languages. Beneath the Palace of Mycenae there has been found a copper ingot, about 2½ feet long, in the shape of a hide stretched out to dry. It no doubt represents the transition from a hide or cattle currency to metallic money.[3] The use of cloth as currency is widely distributed among primitive peoples. It was used for the purpose in Europe up to the Middle Ages, having a definite legal ratio both to the older cattle and to the newer metallic money. The Hudson's

---

[1] Burns, *op. cit.*, pp. 8–9; Regling, *Münzkunde*, p. 1.

[2] "Geld," *Reallexikon*; Burns, *op. cit.*, pp. 9–10.

[3] Burns, *op. cit.*, p. 15.

Bay Company introduced blankets as a general means of payment among the Indians of the north-west. Wealthy Tlinkits often stored them up by the hundreds in big wooden boxes.[1]

Ornaments have served the purpose even more widely, the use of shells, glass beads, and polished stones, especially, being both old and widely distributed. Tortoise and cowry shells were used as money in China at a very early age. The idiogram of a shell means wealth and riches, and appears in all the words relating to purchase, sale, prices, cheap, and dear. Tortoise-shells were used for the larger payments which would have required too many cowries. It was used in China as early as 2000 to 1500 B.C. In the seventeenth century the Dutch and Portuguese transported large quantities of cowry shells to Africa as ballast, and introduced them as currency. Cowries have been found in European graves from the later Stone Age up to Roman, Anglo-Saxon, and Slavonic times. These seem, however, to have been used merely as ornament. But cowries were no doubt also used as currency in Europe in early times, although they left no influence on the subsequent development of money. Shells are also used as currency in North America, and their use is especially widely distributed in the South Sea Islands. Glass beads, like cowries, were valued from the earliest times as amulets in Egypt and India and were used as currency. Until recently they were still used as money in places as widely separated as West Africa and the South Seas. The Mishmis of Assam use the skulls of animals, the Dayaks of Borneo those of human beings, as standards of value and media of exchange. Stones also have found favour for the purpose, in forms varying from small pieces of polished stone to the huge slabs and rings of Jap and the New Hebrides, which are laboriously manufactured and still more laboriously transported.

Much more important in the development of currency than these objects have been the metals, which ultimately superseded all the other materials. The advantages of metal consist in its being homogeneous, durable, easily divisible, and storable. Some varieties have remained scarce relative to the demand, and currency made of them is therefore easily transported. Copper was the first of the base metals to be used as currency. Copper paid by weight served as money in central Italy from at least 1000 B.C. to the third century B.C. Its use as a standard of value gave rise to the Latin verb *aestimare*, and to the English words *esteem* and *estimate*. Bronze was used as money at an early age throughout the Mediterranean. Of the precious metals gold is older than silver. Both have been used as currency by practically all peoples who have left records. The use of iron for the purpose has been more restricted because it came into use later and oxidizes easily. It was used in antiquity especially in continental Greece, where it provided the staple currency of the Peloponnese down to the beginning of the seventh century B.C. The laws of Lycurgus, in about 600 B.C., expressly prohibited the introduction of gold, silver, or even copper into Sparta for commercial circulation, iron alone being allowed. In Britain iron bars circulated which were in the form of unfinished swords. Lead was used as money in the Near East, although its weight restricted its use for that purpose. Nickel is said to have circulated in north-west India soon after 200 B.C. Tin money was used in the Malay States.[1]

---

[1] Heilborn, *op. cit.*, Vol. II, pp. 93–4.

Three definite stages can be traced in the history of the development of metallic money. At first metal ornaments and implements are used as currency. Then the raw material circulates in the form of lumps and bars. Finally coins are invented.[2]

The favourite form of the metal ornament used as currency is the ring, whether to fit the arm, foot, finger, or any other part of the body; and closed, open, or spiral in form. The popularity of this form is no doubt due to the fact that primitive people like to carry their most precious possessions on their persons. These articles are at first used indiscriminately as ornament or as money; then they assume conventional forms, and are used as currency only. Rings were used as money by the ancient Semites and in early Egypt, where they began to be displaced by the weighed metal about 1150 B.C. The gift made to Rebekah by the servant of Abraham of a "golden earring of half a *shekel* weight and two bracelets for her hands of ten *shekels* weight of gold" suggests that jewellery was made in unit weights, so that it could be used also for money. In Egypt the gold and silver rings were often made so small that they could not have been used as jewellery, but only as means of exchange. Rings were also used in Europe by the ancient Nordics, and large numbers have been found in the Swiss lake dwellings. As many as 1,200 of these have been discovered together in conventional forms. They are often attached to larger containers, the purses of the lake dwellers.[1]

---

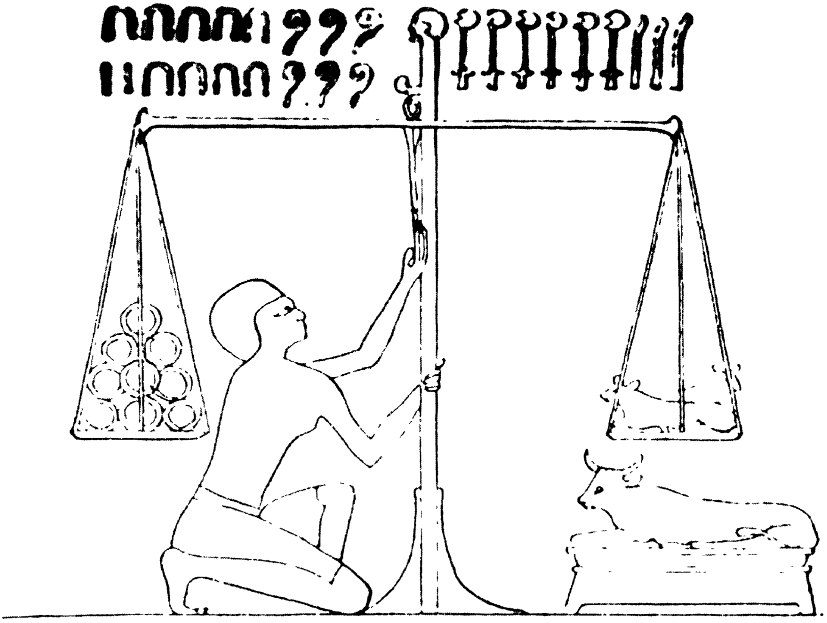
[1] Burns, *op. cit.*, pp. 13–26.

[2] "Geld," *Reallexikon der Vergeschichte*.

Numerous forms of metal implements have served as currency. Axes, knives, sickles, spades, hoes, spits, pots and pans, and among maritime peoples hooks and anchors have been used for the purpose. At first they serve indiscriminately as implements or as currency, then they assume conventional forms. They are at first counted individually, later they are weighed. The laws of Crete laid down fines in pots and kettles. The coins that were later issued in the island bore representations of tripods. The famous iron money of the Spartans was in the form of spears. The Byzantines later used the same form, and the Pangwe have used it almost to this day. Axes were widely used as currency in prehistoric times. The idiogram of a double-axed bar appears on inscriptions at Knossos in Minoan times, and no doubt refers to valuation or payment in such currency. The Cretans and Ethiopians paid tribute to Egypt in such money during the reign of Thutmosis III, 1501–1447 B.C. Egyptian paintings often show bars of this form in gold, silver, bronze, and lead. Axes are often found together

---

[1] "Geld," *Reallexikon*; Burns, *op. cit.*, pp. 18–28.



THE WEIGHING OF RINGS
(Egyptian wall-painting from Thebes dating from the reign of Thutmosis III, 1501–1447 B.C.)

in large numbers. In Normandy there have been discovered as many as four thousand strung on wire, in conventional forms, which make them useless for practical purposes. In the double-axed bars used in the Mediterranean countries, the form is merely a reminiscence, a commercial usage. They were made of approximately the same size, no doubt to facilitate payment, but in settlement they were always paid by weight. Similarly the Chinese knife money gradually became shorter and thicker, first the handle and then the blade disappearing until finally only the ring was left behind. In this way was effected the transition from implement money to the payment of the raw material by weight.[1]

The use of lumps and bars of metal paid by weight frees the idea of money from the primitive conception of its auxiliary use as ornament or implement, and concentrates attention on the essential function of facilitating exchanges. Gold and silver, on account of their great value, were not used in the ancient civilizations as implement money. Even when made in the form of rings they were paid by weight, not by shape or size. In order to do this with any accuracy a system of weights is needed. This existed in the Near East in the third millennium B.C.

As soon as the metals are paid by weight an effort would naturally be made to let the bars conform to the existing weight standards, which greatly facilitates the process of weighing. On the other hand, it seems that the choice of a weight standard would itself be greatly influenced by the existing unit of value. Professor Ridgeway maintains that the weight standards of the Near East were derived from the adoption of the metal equivalents of the existing units of value. Cattle, he says, formed the common measure of value in pre-monetary times, and their gold price provided the basis for the subsequent systems of weight standards.

---

[1] "Geld," *Reallexikon*; "Geld," *Paulys Real-Encyclopädie der Classischen Altertumswissenschaft.*

> In the regions of Asia, Europe, and Africa, where the system of weight standards which has given birth to all the systems of modern Europe had its origin, the cow was universally the chief unit of barter. Furthermore, gold was distributed with great impartiality over the same area; and known and employed for purposes of decoration from an early period by the various races which inhabited it. . . . Practically all over that area there was but one unit for gold, and that unit was the same weight as the Homeric talanton. . . . Gold was the first object for which mankind employed the art of weighing . . . and over the area in question there was strong evidence to show that from India to the shores of the Atlantic the cow originally had the same value as the universally distributed gold unit. From this we drew the conclusion that the gold unit, which was certainly later in date than the employment of the cow as a unit of value, was based on the latter.[1]

Ridgeway no doubt exaggerates the standard character of the metal bars of antiquity. His theory, however, seems to find support also from the fact that many of the subdivisional units used in early societies had their origin in units of value used concurrently with the ox. Thus there seems in early times to have been a multiple of the gold *shekel* based upon a slave unit of value. The Babylonian silver units may have been derived from their gold unit to which they may have been related on a value basis. But there is no evidence for this, and it is probable that they had a separate origin.

They may have their own separate roots in the period when domesticated animals provided the principal units of value. There is some evidence that the sheep was the basis of an early unit of value in many parts of Greece, Syria, and Palestine. The Hebrew word *qesitah*, translated as "a piece of money" in the Old Testament, is also translatable as "a lamb." Moreover, weights in the form of sheep have been found in Syria, and in Palestine tribute was calculated in sheep. Plutarch states that Solon reckoned a sheep equal to a *drachm* in sacrifices. If the sheep was worth one-tenth as much as an ox, and when the latter was translated into gold the former was translated into silver, the tenfold relation between gold and silver units would result. Wherever both gold and silver units were coined in early times, the resulting series of values is, in consequence of the duodecimal division of units of each metal, and the decimal relations between the value of the units of different metals, a combination of both factors.[1]

---

[1] Ridgeway, *The Origin of Coin and Weight Standards*; quoted, Burns, *op. cit.*, p. 183.

The preservation of the unit of weight must have presented serious difficulties. The desire to find a more accurate measure for the value of gold seems to have led to its being weighed against seeds. Seeds were taken which were of a uniform and convenient size and weight, and the unit of weight was defined in terms of these seeds. It was assumed that they would remain fairly uniform at different places and in different times. Ridgeway gives the weights of the following seeds used in ancient times for weighing.[2]

	Troy Grains
Rye	0·5
Wheat	0·75
Barley	1
Carob	3

The grain of wheat is mentioned as a unit of weight in the laws of Hammurabi, at the end of the third millennium B.C. This primitive method of defining standards persisted in England as late as the thirteenth century A.D., when the weight of the penny was defined as equal to thirty-two grains of wheat "round and dry and taken from the midst of the ear." The carat weight still used by goldsmiths is based on the weight of the seed of the carob or locust tree. The State, however, also recognized at a very early date the advantage of clearly defining and preserving weight standards. In the empires of the Near East official standards of weight were established and official weight-masters appointed. The earliest of these standards date from about 2000 B.C.[3]

The fact that bars of metal paid by weight were used in the civilizations of the Near East which had a developed civilization and a fairly extended commerce, shows that the use of the balance was not an overwhelming hindrance to trade. Even after the introduction of coins, scales for the weighing of money formed part of the baggage of every merchant. The Book of the Dead makes reference to the crimes of tampering with weights and balances. The Jews were commanded to be honest in weighing, for "a false balance is abomination to the Lord."[1] In the Roman Empire after the third century both bars and coins served indiscriminately as currency. Two ordinances of the year 325 state that both coins and bars should be received in the Imperial treasury according to weight only. The privileged position of coins was therefore annulled. Rome in fact reverted to a bullion standard. The interrelation of weight and value standards is reflected in the names of the *talent*, *mine*, *shekel*, and *drachme* in the Near East, and the *mark*, *livre*, and *pound* in western Europe. In the Semitic languages weighing and paying are the same word. The English words "expend" and "spend" also recall the times when spending meant the weighing out of metals.[2]

---

[1] Burns, *op. cit.*, pp. 251–2.

[2] Burns, *op. cit.* p. 32.

[3] Burns, *op. cit.*, pp. 32–3.

Among primitive peoples, however, systems of weights do not exist, and metals are paid according to volume. In parts of the East Indian Archipelago and along the coast of Guinea gold dust was valued by volume. Bars of metal are often made in conventional forms, such as the T-shaped bars of tin which circulated in ancient Mexico, the copper bars in the form of a cross which were used in Katanga, and the iron nails or spits, four feet in length, which served as currency in ancient Greece. More frequently the metal is made in the form of wire, which can be cut off in any desired length and be used also for other than monetary purposes. The use of copper wire was widespread in prehistoric Europe, and still is in Africa to-day. Small change is obtained by cutting off pieces from wire or metal plates. This subdivision is facilitated by notches being made in the wire, and even in bars, rings, and axes. The word *ruble* is said to be derived from *rubit*, meaning "to chop off." When these bars are stamped by private traders or goldsmiths to guarantee their fineness and weight, the transition to coins is very nearly complete.[1]

---

[1] Proverbs xi. 1.

[2] Burns, *op. cit.*, pp. 33–5.

The custom of concluding a contract by the attachment of a seal is of very great age. Seals have been discovered in Mesopotamia which are five thousand years old. The custom of merchants of guaranteeing the quality of their wares by stamping them is also very old. Examples of such guarantees are the stamped cloth, skins, and bars used as currency in China and India, and the seals utilized by the treasure houses of the temples in the Near East. The inscription of the king's name on bars, the use of official emblems, and especially the stamp *Romanom* on the Roman-Campanian bars, all public guarantees of standard weight and fineness, are definite transition stages from the payment of metal by weight to the use of coins. The device initiated by the Lydians of stamping ingots of the precious metals was no doubt also originally motivated by the desire of facilitating the export of electrum. This is suggested by the fact that the first punch-marked ingots were made up in the two different weight standards which then existed in the Near East, the one for export to Mesopotamia, the other for use in the Ionian coast towns of Asia Minor. In this way, quite unintentionally, they hit upon the idea of issuing coins, thus making one of the most revolutionary inventions that ever occurred in the history of currency.

Coins were the invention of a highly sophisticated society. Where they have been introduced among primitive peoples they have soon superseded the other materials. Maria Theresa dollars, especially, have been very popular in parts of Africa due, it is said, to the well-developed bust of the Empress. To this day they form the official currency of Abyssinia.

---

[1] "Geld," *Reallexikon.*

CHAPTER XIII

DISTRIBUTION AND CONTROL

THE distribution of commodities and services in primitive societies is based essentially on a system of reciprocal obligations, of mutual give and take. This gives their economic relations a collective character. But primitive collectivism is always definitely limited, both with regard to the circle of associates, the family, the clan, or the local community, to whom it extends, and with regard to the objects to which it applies. Nor does it prevent the members of these small groups from displaying in their communal relations the keenest, if polite and suppressed, sense of their own interests. This reciprocal character of primitive relations is a strong factor ensuring the performance of social obligations, for failure to reciprocate places a man outside the economic order, and therefore in an intolerable position.[1]

The collective character of economic relations is very marked among the lower primitives, and is exercised especially with regard to food. The distribution of food is generally subject to minute prescriptions, which, however, vary considerably among different peoples. Sometimes only the product of the communal hunt is distributed collectively, that obtained by individual effort being left to the separate households. Among the Andamanese only the share of the bachelors in the communal hunt is distributed by the chiefs. The plants collected by the women are usually also left to the individual families. Individual claims to food by no means imply, however, that the provisions will be enjoyed exclusively by the owners. In such small societies, where the procuring of food is both difficult and uncertain, egotism with regard to its use will not be tolerated. "The hungry Indian had but to ask to receive, no matter how small the supply, or how dark the future prospect. It was not only his privilege to ask, it was his *right to demand.*[1] This collective character of primitive economy has the advantage of binding the members together in times of prosperity and adversity, and of securing the means of subsistence to those who are temporarily or permanently incapacitated.

---

[1] Malinowski, *op. cit.*, pp. 26–7.

Land, too, is held on a collective basis. Claims to the exclusive use of a given tract of land are made even by hunting and collecting peoples. The size of the land to which a group claims exclusive right varies with the size of the horde and the possibilities of making a living. Among the Andamanese it was usually about sixteen square miles; in Australia it often exceeded a hundred square miles. The intrusion of outsiders is resented, and wars among the lower primitives are often due to the violation of hunting rights.

Within the group, however, the land is held on a collective basis. The individual ownership of land among hunters is largely lacking. Such peoples do not value individual pieces of land, but are interested rather in the animals or plants which can be obtained over an extended area. The soil itself, in fact, is usually associated with a deity with whom it is personified. Exceptions do exist. The Algonquins of eastern Canada are said to have laid particular stress on the private ownership of hunting territories, transgressors being liable to physical violence, or to evil magic. The Tolowa of California recognized the private possession of tracts for hunting deer. Washo families own clumps of pine-nut trees. Women sometimes claim collecting patches for exclusive use, and leave it to their daughters. Examples of private ownership in land are found even among the Veddas of Ceylon, the Semang of the Malay Peninsula, and the aborigines of Australia. Under certain conditions such a subdivision of interests and responsibilities may have beneficial effects. Thus among the Wood Crees and cognate tribes, "if the lands were not subdivided, the hunting of the finer kinds of fur-bearing animals would be constantly interfered with, the beaver houses broken down, and the beaver killed at all seasons, as it would be no one's special interest to protect them."[1]

---

[1] Quoted, Sumner and Keller, *op. cit.*, Vol. I, p. 272.

Ownership, however, may have a very different connotation in primitive communities from what it has in civilized societies. Often, indeed, individual rights to the soil have a sacral rather than an economic significance. Thus a child may inherit the land on which it was born, or on which its placenta was buried, a man the soil on which his blood had flown, or on which his ancestors are buried. Such claims can hardly be of much practical value in a nomadic society, where numerous individuals may be born, or may bleed in the same place. Thus claims are sometimes made to certain pieces of land by individuals, even though all the members of the group are free to hunt on the property.[2]

Individual claims to tracts are found also among fishermen. Good fishing spots, in fact, are more restricted than hunting territories, and are therefore more easily appropriated. These claims were exceptionally developed among the Canadian Indians of the north-west.[3]

> Throughout this region the coast-line, streams, estuaries, and adjacent lakes are divided amongst the different families, the right of possession descending from one generation to another as personal property. The larger salmon streams are sometimes jointly owned by several families, or owned by one family and leased for a consideration to one or several others. Stranded marine animals, or other débris washed by the tide, belong to the family owning that portion of the shore line, the boundaries of possessions being definitely marked and respected accordingly. Nor is this boundary confined to the strip of coast, but extends well out to sea, carrying with it the right to shoot seals and gather birds'

---

[1] "Land Tenure," *The Encyclopaedia of the Social Sciences*; Sumner and Keller, *op. cit.*, Vol. I, p. 288.

[2] Hobhouse, Wheeler, and Ginsberg, *op. cit.*, pp. 248–9.

[3] Quoted, Sumner and Keller, *op. cit.*, Vol. I, p. 285.

eggs on outlying rocks, hunt sea-otters, and to fish on well-known halibut or cod banks.

The collective character of primitive economy is also marked with regard to certain kinds of movable property. According to McDougall, the propensity to acquire, possess, and defend whatever is found useful or otherwise attractive is innate in the human being.[1] But instinctive urges may be considerably modified by social institutions. Where the means of acquiring subsistence are as scarce and uncertain as they are in hunting communities, the non-utilization or unequal distribution of capital cannot be tolerated. Thus among the Andamanese, a utensil or canoe not utilized at the moment by the owner may be borrowed without permission. Among the Eskimos a man who possesses several objects is not allowed to ask back one which has been lent out, and no one is allowed to inherit a tent or a boat who is already in possession of one. Nor does the fact of ownership imply the right of expropriation to outsiders.

Individual ownership first developed in movable objects of personal use, such as ornaments, weapons, or utensils. These objects are considered, not as things objective and apart from the owner, but rather as an extension of his person. Thus a man can be worked upon magically by getting possession of some piece of his property, and especially of intimate possessions such as clothing. To wear the clothing of another is a risky procedure, as the wearer may be subjected to moral infection. This spiritual connection existing between the possessor and his property is extended also to incorporeal possessions. Thus the right to sing certain songs, tell certain tales, perform services, use particular names, positions, or other privileges may be the sole prerogative of an individual or a group. These may, however, part with their rights for a consideration, in much the same way that patents and copyrights are sold in civilized societies.

It is on account of this spiritual connection existing between the possessor and his property that his possessions are usually not appropriated by others at his death, but are buried or cremated with their owner. This often applied even to his wives and slaves. As the next life is merely a projection of the earthly one, the deceased would require at least his personal and peculiar possessions. The survivors regard the belongings of the dead as sacred, holy, or unclean. Those possessions which are not destroyed are utilized only after the lapse of a certain time. In this way a compromise may be effected. Thus the Cahuilla Indians of California formerly destroyed all the property of the dead, including their homes. When, however, they came to live in more expensive houses on the Indian reservations, they compromised by not burning the dwelling until three deaths had taken place in it. The practice may in the course often become purely symbolical. In some Maori villages half of the houses belonged to the dead. Even in Rome a man's dwelling was sacred to his ancestral spirits. Among the lower primitives the burning of the house of the deceased is very common. The knowledge that a dwelling may have to be destroyed encourages the construction of poor ones.[1]

---

[1] McDougall, *The Energies of Men*, p. 98.

It is also on account of the fact that property is considered as a part of the personality of the owner that goods may be held inviolate by wives, children, and slaves, even though the husband, father, or master may exercise almost unlimited control over the persons of his dependents. On account of this mystical relationship the owner can, by the declaration of a tabu, secure an object for his own exclusive use. This claim to property is usually expressed by the use of tabu signs and marks of ownership. The fear of evil befalling the transgressor is a sufficient sanction enforcing respect for these prohibitions.

Economic differentiation is found to a small extent even among hunters and collectors, in that preference is given to elders in the distribution of food. It has been suggested that many totemistic food prohibitions are due to the efforts of the elders to favour themselves.[1] They usually also arrogate to themselves the exclusive right of possessing several wives, and these in primitive societies constitute an important source of income. Social differentiation appears in the fact that a vague kind of authority is exercised by the older members of the group. As old age sets in very early in primitive society, the elders would include an indefinite group of men of from thirty-five to sixty years of age. These men are the protectors of tradition, and may form a council to settle disputes. Sometimes this differentiation is carried still further in that leadership is confined to certain members only, such as those exercising magic or belonging to secret societies, persons with dominating personality, or even according to wealth, as among the north-west Californians. Such men, however, seldom become an hereditary body, which is formally constituted and sharply differentiated from the rest of the community. Nor does it prevent old people who have become a burden on the community from being completely neglected or even destroyed.

---

[1] Hoyt, *op. cit.*, p. 79; Sumner and Keller, *op. cit.*, Vol. I, p. 253.

Such communities have little or no formal government. The lack of organized means of control is reflected in the maintenance of law and order. The collective character of primitive economy and the small number of objects conferring wealth make legal relations very simple in character. Theft, for example, is largely non-existent where there is little movable property, and the few personal possessions are considered as belonging directly to the personality of the owner. In such small groups, social and religious sanctions and sentiments, and the reciprocal character of economic relations, are usually effective means for bringing about the performance of obligations, and of securing conformity with conventional morality. Even in the small hunting and collecting hordes, often hardly larger than the extended family, little justice is exercised by the community through the elders. Even the most grievous bodily and personal injuries are generally considered as affecting only the individuals concerned, who have to seek self-redress either unaided or with the help of their family. Exceptions do exist. But generally it is questions of magic and religion which are considered as public delicts.[1]

---

[1] Thurnwald, *op. cit.*, p. 269.

It is only where the means of subsistence of the community are at stake that rigid control is sometimes exercised in economic affairs. This is especially the case among some of the higher hunters where hunting is carried on with an elaborate organization and technique, requiring the co-operation of all the able-bodied men of the community. The rigidity of this control was especially marked among the Plains Indians of North America. During the period of the bison hunt the group was vested with powers to prevent individual and premature attacks on the herd, and to punish offenders with corporal punishment, with destruction of property, and in extreme cases even with death. In all other matters the members of the community enjoyed complete freedom from coercion; even homicide was not regarded as a criminal act. But with transgressions of the hunting regulations it was different. The police force, which had merely advisory powers in case of murder, now assumed complete control. Such breaches of the hunting rules

> were treated as an attempt against the public, in short, as a criminal act, and they were punished with all the rigour appropriate to political offences. In other words, for the brief period of the hunt the unchallenged supremacy of the police unified the entire population and created a state "towering immeasurably above the single individuals," but which disappeared again as rapidly as it had come into being.[2]

The collective character of economic relations is retained to a certain extent among all primitive peoples, although economic differentiation becomes more important among the higher primitives. Thus the communal rights to the use of land are modified among agriculturists, and lose in importance with the development of agricultural technique. Numerous intermediate forms are found, from communal tenure to the permanent family, and even individual ownership of plots of land.

---

[1] Hobhouse, Wheeler, and Ginsberg, *op. cit.*, p. 54.

[2] Lowie, *op. cit.*, p. 104.

With the migratory agriculture practised by the lower agriculturists the ownership of land, as apart from the group control of a territory, is of little importance. The population is usually sparse, and abundant land is available. It is only the arduous task of clearing and cultivating the soil which creates economic values. The land belongs to the community, but any family is free to occupy and cultivate plots and to retain them as long as they remain in cultivation. These rights do not lapse if the ground is allowed to lie fallow in order to recover its fertility, but removal to another piece of land results in the forfeiture of the old property. Uncultivated land remains the common hunting ground of the whole community. There is, therefore, merely a pre-emptive possessory right to occupied land. It is only to the products of labour, the crops, huts, or trees, to which more or less well-defined individual rights are attached. Sometimes these rights are merely formal, and communism with regard to the use of food in fact to a very large extent exists within the group. Thus in parts of Melanesia the produce of the land is free to the whole village, but there is the definite distinction that members of the same related group, or *vantinbül*, can take from one another without asking, whereas members of another group must first go through the formality of asking permission from the cultivator in whom ownership is theoretically vested. Such permission, however, is never refused.[1]

It is on account of the distinction between property rights in land and rights to the products of the land, or the buildings erected on it, that trees or dwellings may belong to different people than those who hold the land. The soil as such, however, belongs to a deity, to the community, or to the chief as its representative. The permanent alienation of land to outsiders is not allowed.

---

[1] Rivers, *Psychology and Ethnology*, pp. 176–7.

Immigrants may use land only on sufferance, and their descendants only very slowly acquire permanent rights in it. So strong is the religious association of a community with the land on which it lives, that among the Negroes the conquest of a territory does not involve the acquisition of rights to the soil. Even the most unscrupulous conquerors have usually respected this law.[1] Similarly in Melanesia the chiefs representing alien conquerors have not attempted to expropriate the commoners, but have been content with tracts offered them, and with the rights to land of those of their wives who are commoners. Where the same land can be cultivated continuously over a fairly long period on account of the use of manure or the rotation of crops, it is a very widely distributed custom to divide the available arable land periodically among the individual households.

Among the higher agriculturists there comes a decline in communal land tenure owing to social stratification and the greater rights claimed to the land by the chiefs and the nobles. Individual and still more signorial claims to the land increase in importance. Land is more frequently rented. There comes a vagueness with regard to the relation of the chief to the land. It is not quite clear whether he is the owner or merely the administrator of the communal land. "We seem in fact to get something of that ambiguity as between signorial and popular ownership that we find at the beginning of our own history."[2]

The chiefs and the nobility, usually in association with religious ideas, claim rights to the land. The king or titular overlord would be regarded as the superior owner of the ground. The subordinate chiefs would, at least nominally, derive from him their privileges and their power. They again allocate their lands among their own subjects, who, however, themselves have definite rights to the usufruct of the land. The ground belongs to the chief, but the right to use it belongs to his subjects.

[1] Delafosse, *Les Négres*, p. 44.

[2] Hobhouse, Wheeler. and Ginsberg, *op. cit.*, p. 253.

These therefore merely have possessory privileges, and they cannot alienate their share. With the more intensive cultivation of the soil, the claims of the individual as against those of the community become strengthened. The introduction of the plough, the use of manure, and the rotation of crops, especially, give agricultural land a permanent value, for with relatively short fallow periods good land can be maintained in cultivation indefinitely. "The periodic reallotments take place less and less often, occupation grows longer and longer, and ends by becoming a life-interest. And when once this is reached, private ownership is at the door; it only needs that inheritance should be permitted or authorized."[1] This permission was no doubt first extended to reclaimed waste, and then to other cultivated land. There thus comes about a descending scale of rights from the sovereign to the individual holder.

Differences in wealth also become more important among cultivators. The personal possessions of nomadic peoples are limited by the difficulties of transport. A sedentary life increases the scope for the accumulation of property. With the development of culture possessions also tend to lose to a certain extent their personal and concrete character. For with the development of crafts the number of objects made for exchange increases. The fact of exchange tends to weaken the purely subjective associations. Wealth therefore becomes more secularized and more objective.

As the women cultivate the soil and produce most of the industrial commodities, they are an important source of income. Polygamy is therefore a means of social differentiation. Women are valued for their offspring, their production of food, and their skill in the crafts. As a rule only the chiefs and elders are able to take advantage of this source of income. The secondary wives of a chief often enjoy little of his company. They are in fact little more than hard-worked servants. Such women are often selected deliberately with a view to their skill in the crafts. In the New Hebrides the price paid for a wife varied from ten to twenty pigs, "according to her capabilities as a worker in the yam-patch."[1] Among the Maori some of the wives of the chief, being women of rank, would bring a dower of land and slaves and cultivate their own fields. The chief would reside with each in turn, like a medieval baron, consuming the accumulated produce of each household.[2] In the Trobriands the chief takes a wife from each subject village. According to native law a woman has to be supported by her brothers and maternal relatives. Contributions to the chief are treated on the analogy of the obligations of the brothers-in-law. As his wives are usually related to the village headmen, practically the whole community has to work for him. Some of the chiefs, in olden days, had as many as forty consorts, and probably received from 30 to 50 per cent of the harvest of their subjects.[3] The institution of polygamy thus serves the function of a tax system, and enables the chief to derive a large part of his revenue from his own resources.

---

[1] Letourneau, *Property, Its Origins and Development*, p. 116.

The income of the chief is further swelled by gifts, fines, confiscations, the labour of his subjects, and other taxes and bribes. Presents are usually made to him by his subjects either at harvest time, to obtain favour, or as a prelude to a request. The first fruits are very generally claimed by him. African kings often claim a share of the ivory obtained in their country. Maori chiefs appropriated flotsam and jetsam where the shore was uninhabited. Plunder in raids also swells the resources of the chief. He may even monopolize the trade of his territory. His subjects may be requested to render tribute in produce, to till his fields, herd his cattle, build his dwellings, or to do domestic service. They are entertained in turn with food and drink. Thus the essential qualities of a good chief among the Baganda have been defined as "beer, meat, and politeness." Peasants who worked for him expected to be treated. "The chief would kill cattle when he saw that they were tired; they ate their fill, and then worked with all their might."[1] The form of the gift is often maintained, though among the higher primitives the services tend to obtain a more and more one-sided character. Sometimes only "special" services are recompensed. In the better organized States, such as Ashanti, there are elaborate systems of tribute, of death duties, court prices and fees, market tolls and trading monopolies. The levies of the central Government in Ashanti were distributed among the lesser chiefs for collection. These recompensed themselves for their trouble by collecting considerably more than the sums desired.

---

[1] Nieboer, *op. cit.*, p. 389.

[2] Firth, *op. cit.*, pp. 116–17.

[3] Malinowski, *Argonauts of the Western Pacific*, p. 64.

These resources are needed to maintain the prestige of the chief. For men of rank are frequently called on to give hospitality to travellers, relatives, and visitors of note. Provisions are also freely distributed by the headman among his own followers, especially on the occasion of feasts, and to provide for them in time of need. Contributions to the chief were, in fact, occasionally regarded as public treasuries, to which all subscribed, and from which the community was fed in times of stress or on public occasions.[2] The giving of feasts and similar social functions are often the only functions of the chief. Among the Maori these feasts were on a very large scale, and the initial labour was sometimes undertaken more than a year in advance. As the main object of these festivals was a lavish display of food, the prodigality was usually followed by partial starvation. On the other hand, they helped to maintain cordial relations among neighbours, offered contact with different tribes, and provided a goal and a stimulus for work. The reputation for liberality is much sought after, while meanness is universally despised. Even the imputation of poverty is a severe blow to the pride of a Maori chief.[3] Meanness is the only vice about which the Trobrianders have strong moral views, while generosity is regarded as the essence of goodness.[1] "Generosity," says Rattray, "was an absolute *sine qua non* for an African potentate, and I doubt if the wisest and greatest who ever lived could have remained long upon a stool had he not been generous almost to prodigality."[2] This conception of wealth and of the reciprocal obligations involved in its distribution is shown in a more assertive form in the institution of the *potlach*. It consists of a challenge in the form of a public feast, at which, by eclipsing a rival in the munificence of the property distributed or even destroyed, a part of his honours, names, crests, or privileges can be annexed. It was therefore a veritable war with presents.

---

[1] Mair, *op. cit.*, p. 183.

[2] Sumner and Keller, *op. cit.*, Vol. I, p. 501.

[3] Firth, *op. cit.*, Ch. IX.

The chief as a centre of distribution also assumed the initiative in the construction of public works and other forms of communal enterprise, such as the organization of trading expeditions, the building of a house of assembly or of a large canoe. Accumulated resources were especially necessary for such undertakings, as the object was usually not to obtain the greatest effect with the least expense, but rather to stimulate effort and to acquire prestige by a lavish expenditure.

Where the means of subsistence are continuously redistributed great inequalities in the standard of living cannot arise. As the means of satisfying human wants are relatively simple a substantial equality in the ways of living is, in fact, forced on everyone. There are few ways in which a chief can monopolize resources for his own use. The food for the guests of the kings of Ashanti was cooked by their wives. When the office of the king was terminated for any particular reason, he would go back to his farm plot, or to his hunting in the forest. Princes were sometimes placed under the keepers of the dunghills to prevent them from becoming conceited.[3]

The economic inequality between chief and commoner does not consist so much in the greater accumulated possessions of the chief as in the greater amount of resources which are continually passing through his hands. The chief thus represents a reservoir into which wealth flows only to be poured out freely again, for his prestige depends largely on his being a generous giver. A system of reciprocal relations thus arises between subjects and chief. They supply him with food, and he provides them with feasts, and assumes the initiative in communal enterprises. The wealth of a Maori chief, Firth says, "was utilized largely for his own aggrandisement and influence, it is true, but in so doing it contributed greatly to the material benefit of his people."[1]

---

[1] Malinowski, *op. cit.*, p. 97.

[2] Rattray, *Ashanti Law and Constitution*, pp. 116–17.

[3] Rattray, *op. cit.*, pp. 114, 408.

Differences in wealth among commoners are even less conspicuous. Where work is largely performed by communal effort there are collective claims to the product. Not only the cultivation of the soil, but the larger objects of industry and commerce are often undertaken either by related or local groups, or by associations. Even to the objects of purely individual effort communal claims may be attached. For the primitive is "entangled in a mesh of duties, functions, and privileges which correspond to an elaborate tribal, communal, and kinship organization."[2] In the Trobriands about three-quarters of a man's crops are given either as contributions to the chief or as his due to his sister's or mother's husband and family.[3] Relatives have the right to make demands on the successful individual, friends to borrow from him. He may even be accused of practising sorcery for making other people's property disappear into his own house. The aversion of herders to killing their cattle is no doubt due to the practice of sharing food. In Fiji this liability to share has proved an effectual bar to the adoption of European methods of trading. "A Fijian who sets up as a trader is liable to have his goods appropriated by anyone who comes into his store, to such an extent as to make his success impossible."[4] To this day the Chinaman who has acquired wealth often prefers to emigrate, rather than to face the numerous exactions of relatives and friends.

---

[1] Firth, *op. cit.*, p. 289.

[2] Malinowski, *op. cit.*, p. 10.

[3] Malinowski, *op. cit.*, p. 61.

[4] Rivers, *Social Organization*, p. 107.

As prestige, however, is acquired by generosity, the disposition over wealth is a means of obtaining distinction. With the tribes who practise the *potlach*, influence is acquired by the lavish distribution of property. "All ranks of their aristocracy are to be reached by especial generosity." Among many primitive peoples wealth is necessary to buy social advancement, and the incurring of debt very generally leads to slavery. Possessions are a necessary requisite for the acquisition of a wife, for the winning of favours, and for the atonement of transgressions. With Dewarra in New Britain, "one can attain everything: atone for adultery, blood-guilt, and murder; feuds are mostly composed with dewarra, and in it is paid the war-indemnity of the defeated party." Possessions are finally necessary to assure the position of the deceased in the next world. In the New Hebrides the departed rank in the spirit-world according to the number of pigs, in the Scandinavian Valhalla according to the amount of gold, that they bring with them. It is a great misfortune to go to heaven poor.[1]

But if wealth is an advantage in primitive societies, it is often also a serious liability. For most groups take precautions to prevent individuals from becoming too rich. The expropriation of the prosperous is always popular with the poor. Wealthy persons often have to dissimulate and hide their fortunes in self-protection. The plunder of prosperous individuals was carried on most systematically and brutally in parts of Africa.

> When a West African kinglet decides that a chief is getting too rich, and hence too powerful, he calls his more immediate supporters together, and they discuss the means that are to be used to compass the doomed one's fall. If he be a man of mettle, with many sub-chiefs and aspiring trade boys, the system resorted to is to trump up charges against him of breaches of agreement as to prices paid by him or his people in the Ibo markets for produce, and fine him heavily. If he pays without murmuring,

---

[1] Sumner and Keller, *op. cit.*, Vol. II, Ch. XVIII.

they let him alone for a time; but very soon another case is brought up against him. After repetition of this sort of thing, the doomed one would refuse to pay, then the king would come down on him for disregarding the orders of himself and his chiefs; fine would follow fine, until the man lost his head and did some rash act which assisted his enemies to more certainly bring about his ruin.[1]

Among the higher primitives social stratification becomes important. With herdsmen, neither the individual nor the signorial ownership of land is of much importance, and the vicissitudes to which the possession of cattle is liable prevent the development of hereditary castes. But being better organized and more warlike than agriculturists, they sometimes reduce these to the position of dependent serfs paying tribute. In agricultural societies slaves often constitute from a quarter to a third of the population, and occasionally they even outnumber the free population. The relatives of an hereditary chief or king, on the other hand, occupy a privileged position. They are distinguished from the rest of the community by honorific names, and have customs peculiar to themselves. Differences in inheritance, in wealth, and in economic function also lead to the development of social classes. With the growth of specialization peculiar values are likely to be attached to the performance of different kinds of work. Where such occupational differences coexist with sharp ethnical contrasts, they may crystallize into rigid caste distinctions.

But social and economic inequalities appear not so much in the form of differences in the standard of living as in the amount of work performed and the security enjoyed by the different classes. Slavery and serfdom lead to the development of a leisured class who acquire a superiority in knowledge and in behaviour. They obtain control of magic and religion. Everywhere in stratified societies the priests form the highest caste. The subjected peoples come to accept them not as a parasitic element, but as a part of the divine scheme of things.

The chief disadvantage of an inferior position in primitive society lies in the insecurity often attached to such a condition. Slaves are in continual danger of being sold or sacrificed, or even of being destroyed merely to display their owners' wealth. The security enjoyed by freemen differs considerably in different societies. In an autocratic kingdom wealth has the disadvantage of attracting the greed of those in power. An African king could seize the property of his subjects on some trifling pretext. The person whose wealth is coveted is convicted of witchcraft and his guilt proved by attention to the poison ordeal. The property of criminals reverts to the Crown. Enormous fines were sometimes imposed for the most paltry offences. The commoner may be sacrificed to the gods for the common good. The arbitrary rights of an African king were sometimes restricted only by the interest which he had in the welfare of his subjects. A Polynesian chief cannot steal. He merely takes what he likes, and his subjects are flattered by the attention. Everything he touches or commands can no longer be used for secular purposes by an inferior. Usually these rights were exercised with moderation, but sometimes they were abused. Whenever a chief appeared in the Marquesas his subjects hurriedly hid all their most valuable possessions.

---

[1] Sumner and Keller, *op. cit.*, Vol. II, Ch. XVIII.

Economic control is exercised largely by the clan or the local group, through the chief, the elders, or secret societies. The functions of the tribe are usually merely confined to certain formal over-rights to the land within its borders. The clan, on the other hand, continues to function as an economic unit long after its political activities had been absorbed by the tribe. It ensures the maintenance of tradition and of psychological attitudes, and effects the co-operation of its members to secure effective unity. For where labour is largely co-operative there must be central control to co-ordinate activities. Where the land is apportioned this is done by the heads of the community, who settle the disputes which result from its tenure. They decide when cultivation shall begin and when cattle shall be driven to the winter grazing grounds. The community also exercises the necessary magic as a corporate entity to ensure the success of economic activities. As the representative of the community the chief arranges its outside relations, and all external trade often has to be conducted through his medium. He declares a tabu on the gathering of crops before the appointed day of harvest, or on rare trees to prevent the extermination of the species.

The tabu is a religiously sanctioned interdict. In a society where organized authority is largely lacking it is a very effective means of control, both for social and unsocial purposes. Thus in West Africa crops are guarded from pillage by being left under the protection of amulets. Similarly, articles left exposed by the roadside are safeguarded by charms being put upon them. In 1840 the Hawaiian Government tabued cattle for five years to prevent them from becoming extinct. In the Marquesas Islands,

> if the quantity of breadfruit was diminishing in a district, the chief had the right to lay a tabu on all or part of the fruit-trees for twenty months, in order to give the trees time to regain strength. In the same way, if fish was beginning to fail, the tabu was laid on one part of the bay in order to allow the fish to spawn without being disturbed and so replenish the sea in the neighbourhood of the inhabited places. During the tabu-periods the people ate fermented breadfruit and fished in the open sea or another part of their fishing-grounds.

In Borneo the chief has the right after the death of a member of his family to put an interdict on the entry into his district. Such prohibitions interfered with commerce in a most inexpedient way and entailed great loss to merchants.[1]

The group thus exercises collective control over the activities of its members. But the individuals are also jointly responsible for one another's deeds. In Bechuanaland the whole village is responsible for a theft committed by one of its members. "The head-man must assist the person robbed, and the responsibility can only be evaded by proving that the spoor extends beyond the village lands to those of another village. Thus the whole tribe becomes interested in detecting the thief." Under such circumstances all the members of the group constitute themselves one another's keepers. The most profound distinction between capitalistic and primitive forms of economic organization is no doubt, as Vinogradoff suggests, that capitalist society starts from individuals and adjusts itself primarily to the claims of the individual, whereas primitive society starts from groups and subordinates individual interests to the claims of these groups.[1]

---

[1] Sumner and Keller, *op. cit.*, Vol. II, Ch. XXXI.

The control is sometimes exercised by secret societies. These are more or less exclusive associations organized for specific purposes. They may include all the men, thus merely excluding the women, or they may be organized on the basis of age, status, or function. Their economic advantages include such things as the possession of trade secrets, the collecting of debts, the exaction of contributions, and police service. The societies are means of securing private property in predominantly collective communities, for members have marks and tabu signs which consecrate their ownership. The Duk-Duk of New Britain, on the other hand, prevents the women from acquiring too much wealth. High grades in the West African Egbo cost as much as a thousand or fifteen hundred pounds. They are said to be worth this sum to large traders, for the methods adopted by the society for collecting debts are most effective. "The Egbo methods of delivering its orders to pay up consist in placing Egbo at a man's doorway, and until it removes itself from that doorway the man dare not venture outside his house." Secret societies, on the other hand, are often sanctuaries and refuges for debtors, the oppressed, and the needy. Sometimes indeed they plunder and intimidate non-members. Generally, however, they are necessary means of control in societies which lack central authority and coercive power. Among the Kpelle of the Sudan, for example, economic control is exercised largely by the Poro. It debates and settles all important public affairs. New ordinances are announced in the name of the organization. Through the Grand Master it maintains bridges and roads, and generally controls internal and external affairs. A similar society among the Pangwe usurped practically all the functions of government. It punished theft, collected debts on behalf of its members, castigated uninitiated persons who offended the organization and made trade almost impossible for non-members. Such organizations often completely dwarf the power of the ruler. But a king may, on the other hand, succeed in utilizing the organization of a secret society for his own purposes.[1]

---

[1] Sumner and Keller, *op. cit.*, Vol. I, pp. 328, 454–6.

With the development of culture there comes a growth of organized government within the primary groups, constituted by the clans, totemic bands, or village communities. There comes, besides, a definite progress towards tribal unity, thus extending the sphere of organized society. The influences of kinship in social organization weaken; territorial ties become more important. The transition was very effectively summarized by Maine, even though he underestimated the importance of territorial bonds among the lower primitives. "England," he says, "was formerly inhabited by the English; the English are to-day the people who inhabit England."[2] The control by the State becomes more centralized, more formal, and more regular. In judicial administration a transition takes place from private to public jurisdiction, from self-redress to public control. Organized society more and more takes on itself the function of redressing wrongs and of maintaining order. The sphere of justice with which the public authority concerns itself is extended. The maintenance of justice is inspired less by the idea of retaliation, or even by the conception of trespass which can be atoned for by the

[1] Cf. Lowie, *op. cit.*

[2] Maine, *Notes on the History of Ancient Institutions*, p. 91.

payment of a fine. Infractions of the law come to be considered more as misdeeds against the public which must be suppressed.

From the point of view of political and economic organization the highest primitives represent the beginnings of a development in two different directions. On the one hand, favourable environmental conditions and strong personalities bring about the formation of centralized despotic states. In other cases the disruptive influences predominate over the centralizing ones. A militant and virile nobility, aided by local or ethnical ties, jealous of their rights, and recognizing no superiors, succeed in forming autocratic and virtually independent domains.

The social organization of different peoples naturally varies greatly in detail. But an "ideal type" of primitive stratified society may have an almost feudal atmosphere. The nobility is generally represented by the full-blooded conquerors of the country. But there are also internal means of differentiation, such as primogeniture or difference in wealth. The serfs are represented by the conquered community, who form a body of dependent cultivators. The relations between the two are embodied in the protection furnished by the lord, and the tribute and services rendered by the serfs. Prejudice or inertia may prevent the rational exploitation of the serf. But they perform the menial tasks, the drudgery of transport and of building, and may have to work for their over-lord for certain days during the week or year. Besides the serfs there are often also castes of craftsmen in a more or less dependent position. In such societies the economic area outgrows that of small self-governing communities. Ethnic and local groups, as the basis of economic organization, tend to be transformed into professional and social classes. The reciprocity of economic relations loses in importance, and the organization comes to be built more and more on the one-sided contributions and services rendered by the dependent classes.

Among other peoples, especially in Africa, the characteristic feature of their social organization is the formation, not of strongly differentiated classes, but of an autocracy. The king claims the privileges which formerly belonged to the whole community. The whole country and everything in it are not only subject to him, but are his personal property. Hence his power over life and death, his right to tax his subjects and to exploit their labour. He makes his rights effective by a system of more or less centralized administration consisting, among the best organized of the primitive kingdoms, of a hierarchy of chiefs and officials whose ambition it is to rise in the system of bureaucracy. The officials are paid by the lands attributed to them for their administration, the subjects being obliged to furnish them with goods and services. The temples are in the same way provided with domains. Centralization may be effectively maintained by the obligatory residence of the highest officials in the capital, as among the Incas, or by periodical attendance at court, as among the Baganda.[1]

The individualization of political power was accompanied by, partly inspired by, but still more clothed in the form of magical and religious thought. Kings are credited with magical powers to control the course of nature for the benefit of their subjects, to make rain, to ensure good harvests, prevent pestilence, or to control the fortunes of war. With the growth of knowledge magic tends to be displaced by religion. The king renounces the attempt to control the forces of nature directly, and seeks the intermediation of the gods. He ceases to be the magician and becomes a priest. As the distinction between the human and the divine is hazy in primitive thought, human beings being frequently endowed with supernatural powers and the gods with very human attributes, the king may himself become an incarnate living god.

The institution of the sacred kingship is widely distributed. Occasionally the kings were restricted to purely spiritual functions, but usually besides their supernatural duties they also exercised supreme political and economic power. "Under a virtuous prince," Ulysses explains to Penelope, "the earth brings forth barley and wheat in abundance, trees are loaded with fruit, ewes yean several times in succession, and the sea is filled with fish. Of so great worth is a good leader."[1]

---

[1] Cf. Mair, *op. cit.*, Ch. VII.

The Sacred Kingship obtained its most absolute expression in the monarchies of Peru and Egypt, of China and Japan. Nowhere did the human god obtain such complete divinity as in ancient Egypt. The worship of the Pharaoh indeed sometimes cast that of the gods in the shade.[2] As king of the harvests, he initiated the seasons of agricultural labour. He turned the first sod, opened the irrigation canals, and cut the first ears of grain. The preoccupation with agriculture was among the foremost duties of the kings of Egypt. They concerned themselves with the cultivation of the soil, the storing of the grain, and the multiplication of the flocks and herds.

But if great honours and privileges are associated with the exercise of these magical and religious functions, their assumption also involves serious obligations and disabilities. For if the people firmly believe that the king can cause the rain to fall, the sun to shine, or the crops to flourish, they will naturally also impute drought and dearth to his negligence or malevolence, and punish him accordingly. In Africa, kings are often exiled, or even killed, if their lands suffer severely from drought or are ravaged by locusts, or if the people suffer from disease. Thus the Banjars of West Africa load their king with presents of grain and cattle as long as the weather is fine. But if a long drought or too much rain threatens to spoil their crops, they insult and beat him till the weather changes. The people of Loango, when the harvest fails, or the surf on the coast is too heavy to allow fishing, accuse their king of a "bad heart," and depose him. The Scythians, when food was scarce, used to put their kings in bonds. Germanic kings were deposed if the crops failed or the fortunes of war fluctuated during their reign. The kings of Tonquin publicly confessed their guilt in times of pestilence or famine, changed their names, and imposed penance on themselves to appease the wrath of heaven.

---

[1] *Odyssey*, XIX, 108.

[2] Frazer, *The Magic Art*, p. 418.

Where the king is considered as God Incarnate, his person is regarded as the dynamic centre of the universe. He is in a very real sense of the word the State. The least defect on his part may cause the universe to lose its balance. He must therefore take great precautions. His life must be regulated down to the smallest details. There are numerous interdictions against the food he may not eat and the things he may not do. As the king is the repository of the fertility of both the people and the country, he must above all be prevented from becoming senile and impotent. This accounts for the widespread practice of killing the king at the first symptoms of old age, in order to transfer his functions to a vigorous successor. Among the Shilluk of the White Nile the infallible symptoms of the decay of the sovereign was his inability to satisfy the passions of a numerous harem. This is no doubt due to the fact that, as the king is considered the embodiment of the country's fertility, the failure of his reproductive powers would involve a corresponding failure among his subjects, as well as in the animal and vegetable world. The strength of the king usually failed between the ages of forty and fifty.

Some peoples considered it more expedient to kill the king while he was still in the full vigour of life before the slightest symptoms of decay could be detected. They therefore limited his reign to a fixed number of years, the period being short enough to prevent the probability of decay during the interval. The period varied with different peoples from reigns of twelve years to annual tenures of the kingship. In the West African kingdom of Ngoio the chief who assumes sovereignty is killed on the night after his coronation, but the right of succession lies dormant, as no one is willing to exercise the privilege.

With the development of culture most of the kings succeeded in inducing their peoples to accept human or animal substitutes. Sometimes the execution became a mere ceremony. The human victims were either members of the royal family, commoners, slaves, or criminals. They were sacrificed to restore the vitality of the king, or merely to "set the land in order." But such substitutes were usually only tolerated if the rites did indeed succeed in reviving the health and vigour of the king, and in bringing prosperity to the land. For even the cleverest sublimations of past practices are usually powerless against crude fears and obsessions which lie dormant during times of prosperity, only to flare up in their crudest and cruellest forms, even among civilized peoples, in times of adversity.[1]

---

[1] Frazer, *The Dying God*, Ch. II.

BIBLIOGRAPHY

Allier, *Le Non-Civilisé et Nous.*

Boas, *Anthropology and Modern Life.*
Borchardt, *Einfluss des Klimas auf den Menschen, Handbuch der Klimatologie.* I.E.
Briffault, *The Mothers,* 3 vols.
Brooks, *The Evolution of Climate.*
Burn, *Minoans, Philistines, and Greeks.*
Burns, *Money and Monetary Policy in Early Times.*

Cameron, *Across Africa,* 2 vols.
Cannon, *The Wisdom of the Body.*
Childe, *New Light on the Most Ancient East.*
—— *The Bronze Age.*
Crawley, *Studies of Savages and Sex.*
Cunningham, "Some Factors in Racial Immunity and Susceptibility to Disease," *Man,* XXVI.

Darwin, *Naturalist's Voyage Round the World.*
Davenport and Steggerda, *Race Crossing in Jamaica.*
Delafosse, *Les Négres.*
Dixon, *The Building of Cultures.*
—— *The Racial History of Man.*

Encyclopaedia Britannica.
Encyclopaedia of the Social Sciences.
Erman, *Aegypten und Aegyptisches Leben im Altertum,* 2 vols.
Essays on the Depopulation of Melanesia. Edited by Rivers.

Firth, *Primitive Economics of the New Zealand Maori.*
Forde, *Habitat, Economy and Society.*
Frankfort, *Studies in the Early Pottery of the Near East.*
Frazer, *The Dying God.*
—— *The Magic Art.*
—— *Totemism and Exogamy,* 4 vols.
Friederici, *Die Schiffahrt der Indianer*

Gillespie, *The Mind in Daily Life.*
Goldenweiser, *Early Civilization.*
—— *History, Psychology and Culture.*

GORDON, Letter in *The Times*, December 8, 1933.
GREGORY, *The Menace of Colour.*
GRIERSON, *The Silent Trade.*

HAMBLY, *Origins of Education among Primitive People.*
HARRIS, *University College Hospital Magazine*, Vol. 13, No. 3.
HARRIS, *Dawn in Darkest Africa.*
HARRISON, *Man*, Vols. 26, 27.
—— *Pots and Pans.*
—— *The Evolution of the Domestic Arts*, Horniman Museum, 2 Parts.
—— *Travel and Transport*, Horniman Museum
HARTLAND, *Primitive Law.*
HEILBORN, *Allgemeine Völkerkunde*, 2 vols.
HELSER, *Education of Primitive People.*
HERODOTUS, *Works.*
HINTZE, *Geographie und Geschichte der Ernährung.*
HOBHOUSE, *Morals in Evolution*, 2 vols.
HOBHOUSE, WHEELER, and GINSBERG, *The Material Culture and Social Institutions of the Simpler Peoples.*
HOGART, *The Progress of Man.*
HOGBEN, *Genetic Principles in Medicine and Social Science*
HOYT, *Primitive Trade.*
HUBERT, *The Rise of the Celts.*
HUGGARD, *A Handbook of Climatic Treatment.*
HUNTINGTON, *Civilization and Climate.*
—— *The Character of Races.*
—— *The Human Habitat.*
—— *The Pulse of Progress*
HUNTINGTON and VISHER, *Climatic Changes.*

JAMES, *Origins of Sacrifice.*

KAPPERS, *On Some Correlations Between Skull and Brain*, Royal Society of London, 1932.
KÖHLER, *The Mentality of Apes.*
KOTY, *Die Behandlung der Alten und Kranken bei den Naturvölkern.*
KRETSCHMER, *The Psychology of Men of Genius.*

LAUM, *Heiliges Geld.*
LEROY, *Essai critique à l'Étude de l'Économie Primitive.*

LESTRADE, *South African Journal of Economics*, Vol. II, No. 4.
LETOURNEAU, *Property, Its Origins and Development.*
LIPPERT, *The Evolution of Culture.*
LIVINGSTONE, *Travels in South Africa.*
LOWIE, *Are We Civilized?*
—— *The Origin of the State.*

MAINE, *Notes on the History of Ancient Institutions.*
MAIR, *An African People in the Twentieth Century.*
MALINOWSKI, *Argonauts of the Western Pacific.*
—— *Crime and Custom in Savage Society.*
—— "Culture," *Encyclopaedia of the Social Sciences.*
Man.
MARTIN, *Lehrbuch der Anthropologie*, 3 vols.
MASON, *Primitive Travel and Transportation.*
—— *The Origins of Invention.*
—— *Woman's Share in Primitive Culture.*
MAUSS, "Essai sur le Don," *L'Année Sociologique*, Tome 1.
McDOUGALL, *The Energies of Men.*
McKENZIE, *The Infancy of Medicine.*
MENGHIN, *Weltgeschichte der Steinzeit.*
MILLER, *The Child in Primitive Society.*
MOELIA, *Het Primitieve Denken in de Moderne Wetenschap.*
MYRES, ETC., *Early Man.*

NIEBOER, *Slavery as an Industrial System.*
NORDENSKIÖLD, *The American Indian as an Inventor.*

ORR and GILKS, *Studies of Nutrition.*

PARTINGTON, *Origins and Development of Applied Chemistry.*
Paulys Real-Encyclopädie der Classischen Altertums-Wissenschaft.
PEAKE, *Early Steps in Human Progress.*
PIRENNE, *Les Anciennes Démocraties des Pays-Bas.*
PITT RIVERS, *Early Modes of Navigation.*
PRESCOTT, *Conquest of Mexico*, 2 vols.

RADIN, *Primitive Man as Philosopher.*
—— *Social Anthropology.*
RATTRAY, *Ashanti Law and Constitution.*

Reallexikon der Vorgeschichte.
REGLING, *Münzkunde.*
Report of Native Economic Commission, 1930–1932.
RICHARDSON, "Iron, Prehistoric and Ancient," *American Journal of Archaeology*, October–December 1934.
RIDGEWAY, *The Origin of Coin and Weight Standards.*
RIVERS, *Psychology and Ethnology.*
—— *Social Organisation.*
ROBERTS, *Population Problems of the Pacific.*
ROSTOVTZEFF, *Social and Economic History of the Roman Empire.*

SAYCE, *Primitive Arts and Crafts.*
SCHMIDT, *Grundriss der Ethnologischen Volkswirtschaftslehre*, 2 vols.
—— *The Primitive Races of Mankind.*
SCHWALBE und FISCHER, *Anthropologie.*
SKEAT and BLAGDEN, *Pagan Races of the Malay Peninsula*, 2 vols.
SMITH, ELLIOT, *Human History.*
—— in the *Universal History of the World*, Vol. I.
SMITH and DALE, *The Ila-Speaking Peoples of Northern Rhodesia*, 2 vols.
SONNABEND, *South African Journal of Economics*, September 1934.
SPEARMAN, *Creative Mind.*
STOUGHTON, *Metallurgy of Iron and Steel.*
STOW, *The Native Races of South Africa.*
STRABO, *Geographics.*
STUHLMANN, *Handwerk und Industrie in Ostafrika.*
SUMNER and KELLER, *The Science of Society*, 4 vols.

TALBOT, *Southern Nigeria*, 3 vols.
TAYLOR, *Environment and Race.*
THOMAS, *Source Book for Social Origins.*
THOMPSON, *Mexico Before Cortez.*
THURNWALD, *Economics in Primitive Communities.*
—— "Primitives Denken," *Reallexikon der Vorgeschichte.*
TOZZER, *Social Origins and Social Continuities.*
TYLOR, *Anthropology.*

VINT, "The Brain of the Kenya Native," *Journal of Anatomy*, January 1934.

WEBSTER, *Rest Days.*

WESTERMARCK, *The History of Human Marriage*, 3 vols.
—— *The Origin and Development of the Moral Ideas*, 2 vols.
WEULE, *Chemische Technologie der Naturvölker.*
WILLCOX, *International Migrations*, 2 vols.

ZUCKERMAN, *Functional Affinities of Man, Monkeys, and Apes.*

INDEX

Abortion, 60–1, 64, 81
Abraham, 234
Abyssinia, 67, 239
Acolman, 222
Addis Ababa, 73
Aegean, 188
Aegina, 21
Aeschylus, 230
Africa—
  agriculture, 121
  bark-cloth, 156
  cattle, 133, 135
  confiscation of property, 254
  cowry shells, 232
  currency, 238, 239
  diffusion, 44, 49, 51
  division of labour, 203
  domestication of dog, 132
  expeditions, 218
  fattening houses, 58
  fowls, 132
  herdsmen, 136
  hoe, 114, 116
  markets, 222, 223
  metals, 150
  narrow heads, 26
  silent trade, 219
  slaves, 196, 205, 207
  specialization, 212
Africa, Central—
  domestication of pigs, 132
  non-tuberculized, 74
  sewing, 188
Africa, East—
  eggs, 127
  smiths, 193
Africa, North, cattle, 133
Africa, South—
  cattle, 133
  position of women, 190
  stone implements, 142
  wars, 80
  women as beasts of burden, 168
Africa, South-West, 126
Africa, West—
  gift exchange, 214
  human sacrifice, 78
  sacred kingship, 262
  tabus, 257
Agave, 104, 105
Agriculture, 110 *seq.*
  collective work in, 183
  diffusion of, 44, 45
  division of labour in, 186, 195
  Egyptian, 262
  herdsmen and, 135
  magic, 38
  property, 247
  Roman, 18
  slavery and, 200
  stages in, 11
  tobacco, 103
  trait complexes, 88
  transition to, 109
  utilization of land in, 75
Agriculturists—
  and division of labour, 186
  and invention of plough, 86
  and markets, 221
  and property, 246
  relations with herdsmen, 136, 255
  slavery among, 202
  undernutrition of, 75
Ainu, 126
Akuri palms, 118
Alaric, 103
Alaska, 44
Algonquins, 241
Allah, 136
Alpaca, 134
Alphabet, 50
Amazon, 21, 178
Amber, 210, 211, 227
America—
  absence of plough in, 122
  bark-cloth, 156
  climate and culture in, 16, 20
  dibble, 114
  diffusion, 44, 49, 52
  reached by Polynesians, 180
America, Central—
  agriculture, 111
  climate of, 17
  division of labour, 188
America, North—
  cannibalism, 78
  capacity of canoes, 179
  cold-hammering of copper, 142
  commercial language of, 225
  control of hunt in, 246

America, North—*continued*
  dogs, 131
  exploitation of slaves, 206
  horse, 98
  shells as currency, 232
  teeth of Indians, 106
  use of watertight baskets, 164
  war in, 80
America, South—
  agriculture, 111, 121
  hammocks, 161
  invention of sail, 178
  lack of markets, 222
  manioc, 102
  naming of Venezuela, 160
  specialization in, 212
  trade in stones, 140
Amulet, 156, 158, 228
Andamanese, 240, 241, 243
Antarctic, 19
Arabia, 134, 135
Arabs, 136, 193, 218, 219
Architecture, 123
Aristocracy, 51, 95, 150, 207, 208
Armenia, 175
Aryans, 156, 230
Ashanti, 67, 209, 251, 252
Asia—
  cannibalism, 78
  domestication of camel, 134
  hemp, 163
  horse, 134
  houses, 19
  loss of traits in, 44
  mankind evolved in, 24, 48
  means of navigation, 174
  oar, 177
  race mixture in, 32
  reindeer hunters of, 96, 126
  relations between herdsmen and cultivators in, 135, 136, 137
  rice, 97
  sail, 178
  use of dog, 132
  use of milk, 133
  weight standards, 235–6
  wheat, 119
  wine, 105
Asia Minor, 105, 231, 239
Ass, 175
Assam, 119, 139, 232
Athabascan Indians, 19
Athens, 230
Atkinson, 65
Aurignacian Period, 210
Australia, 17, 26, 113, 174, 241
Australians—
  brain weight of, 26
  care of dogs, 132
  chew pituri bush, 103
  division of labour, 184
  dolichocephalic, 25
  flatten noses, 154
  means of navigation, 173, 174
  nose-skewers, 158
  position of women, 203
  reap panicum, 119
  reinsert plants, 112
  specialization, 191
  use of poison, 99
Axes, 118, 141, 147–8, 160, 234–5
Azara, 205
Azeapotzalco, 222
Aztecs, 20, 218, 224

Babylon, 175, 229
Babylonians, 133
Badarians, 75, 163
Baganda, 250, 261
Bahamas, 179
Bakongo, 222
Balance, 238
Baltic, 210
Bambata cane, 141
Bamboo, 106, 139, 169
Banana, 46, 52, 70
Banjars, 262
Bantu, 55, 69, 186, 190, 224
Bark-cloth, 48, 156
Barley, 110
Bars, 233, 235, 239
Barter, 188, 226
Baskets, 38, 87, 88, 94, 149, 162, 164, 165, 169, 187
Basle, 229
Bastian, 43
Beads, 152, 232
Bechuanaland, 227, 257
Bed, 161
Bedouins, 168
Beer, 104–5, 179
Belgae, 146
Belladonna, 102
Bellows, 145, 147

Benne, 220
Beothuks, 179
Berbers, 193
Bergdama, 101, 126
Bering Sea, 44, 212
Bermuda, 152
Besisi, 112
Betel-nut, 103
Birth control, 60
Bismarck, 27
Bismarck Archipelago, 227
Bison, 98, 125, 126, 246
Blankets, 132, 177
Boat, 88, 152, 201, 226, 243
Boloki, 150
Bone, 139, 140, 141, 151
Borneo, 41, 56, 67, 103, 221, 232, 257
Brachycephaly, 24 *seq.*
Brahman, 136
Brain capacity, 22 *seq.*
Brain structure, 27 *seq.*
Brandenburg, 229
Brazil, 17, 62, 165, 220
Bread, 104, 105
Bridge, 45, 77, 172, 173
Briffault, 34, 64
Bronze, 85, 94, 119, 144 *seq.*, 233
Bronze Age, 18, 129, 144, 211
Bull-boats, 175
Burma, 126, 132, 192
Burton, 198
Bushmen, 13, 26, 108, 161, 187
Byzantines, 234

Caesar, 146, 216
Caesarian Section, 69
Cahuilla Indians, 244
Calendar, 47
California, 29, 94, 165, 174, 241
Californians, 96, 97, 119, 141, 159, 162, 179, 245
Cambodia, 14
Camel, 37, 128, 133, 134, 168
Cameron, 226
Campigny, 165
Canada, 19, 201, 241
Cannibalism, 76, 78
Canoe, 77, 81, 94, 107, 174 *seq.*, 183, 189, 194, 217, 220
Capri, 173
Caraios, 179
Carat, 237
Caravan, 218, 219
Caribs, 178
Carpentaria, Gulf of, 174
Carthage, 18
Carthaginians, 219
Caste, 91, 196, 255
Cattle, 92, 123, 125, 126, 128 *seq.*, 133, 186, 201, 228, 229 *seq.*, 235, 253, 255, 262
Celebes, 198
Celts, 146
Ceylon, 241
Chariot, 134
Charlemagne, 230
Chief—
  and distribution, 252 *seq.*
  and inequality, 252
  and property, 248
  and public works, 252
  contributions to, 250 *seq.*
  control exercised by, 256
  giving of feasts, 251
Child-birth, 65, 68 *seq.*
Children—
  care of, 69 *seq.*
  desire for, 54 *seq.*, 60
  early maturity of, 71
China, 17, 85, 135, 137, 163, 164, 169, 174, 229, 232, 239, 262
Chinese, 13, 51, 55, 126, 133, 137, 164, 220, 253
Cholula, 222
Christianity, 50
Chuckchee, 48, 183, 212, 221
Clan, 182, 256
Class distinctions, 191, 196, 255, 260
Clay, 164 *seq.*
Clearing of land, 117, 118
Climate, 12 *seq.*, 50
Climatic changes, 17, 18, 24, 45, 48
Cloth, 45, 90, 156, 218, 227, 231, 239
Clothes, 14, 16, 19, 139, 152, 154 *seq.*, 168, 187, 243
Cocaine, 103
Coins, 228, 231, 233, 234, 239
Collectivism, 240 *seq.*, 246, 247, 253, 257
Collectors and collecting, 11, 22, 35, 96 *seq.*, 111, 168, 182, 184, 190, 200, 201, 202
Columbia, British, 64, 82, 96, 97, 99, 179

Comb, 154
Commercial aptitude, 223 *seq.*
Commercialization of relations, 194
Condiments, 102
Congo, 64, 117, 152, 178, 224
Conservatism, 41, 42, 48, 49, 146
Consumption goods, 139, 152 *seq.*
Control, 42, 240 *seq.*
Convergence, 43, 88
Co-operation, 94
Copper, 85, 94, 119, 142 *seq.*, 149, 151, 233, 238
Coracle, 175
Correlates, educing of, 43, 83, 94
Cortes, 223
Cosmetics, 143, 152 *seq.*
Cotton, 163, 164
Couvade, 66
Cow, 127, 231, 236
Cowry shells, 156, 227, 232
Crafts, 40, 84, 91, 93, 139 *seq.*, 182, 186, 212, 219
  loss of useful, 91, 192
Craftsman, prestige of, 193
Crawley, 57, 58
Crete, 234
Cromwell, 27
Culture, 11, 19, 35 *seq.*, 189, 190
Culture contact, 20, 43 *seq.*, 111
Cuvier, 27
Cyprus, 143
Czechs, 228

Damaraland, 69, 152
Dap money, 227
Darwin, 66, 70, 132
Davenport, 30
Dayaks, 41, 67, 204, 232
Days—
  market, 67
  rest, 67 *seq.*, 221 *seq.*
  unlucky, 63, 67, 218
Death rate, infantile, 70, 75, 107
Debt, 197, 208, 258
Delos, 231
Dewarra, 254
Dibble, 114
Dieri, 217
Differentiation, social, 224, 245, 249, 252, 253, 260
Diffusion, 42 *seq.*, 199, 225
Dinka, 133
Diodorus, 132
Diomed, 230
Discovery, 20, 83, 84 *seq.*, 90, 166
Disease, 12, 14, 72, 73 *seq.*, 96
Distribution, 240 *seq.*
Division of labour, 97, 120, 123, 166, 168, 182 *seq.*, 196, 210
Dixon, 32
Dog, 48, 73, 127, 131 *seq.*, 170, 171
Dolichocephaly, 24 *seq.*
Domestication, 24, 35, 108
  of animals, 22, 44, 61, 63, 85, 118, 125 *seq.*, 171, 236
  of plants, 119, 111, 186
Donkey, 134
Door, 160
Drachma, 231, 238
Draught animals, 121, 133
Dugout, 175, 176, 179
Duk-Duk, 258
Duran, 222
Durrad, 70
Dutch, 232

Earth, eating of, 99
East Indies, 156, 160, 238
Ecuador, 66
Egbo, 258
Eggs, eating of, 127
Egypt, 14, 17, 34, 52, 75, 76, 87, 94, 104, 112, 116, 119, 128, 132, 134, 143, 145, 151, 163, 165, 167, 174, 177, 178, 195, 211, 234, 262
Egyptians, 105, 112, 115, 120, 129, 132, 141, 143, 166, 178
Elbe, 229
Elders, 256
Elliot Smith, 143
England, 16, 71, 180, 237, 259
English, 197, 259
Environment, influence of, 12 *seq.*, 35
Eoliths, 140
Equator, 17
Eskimos, 13, 14, 19, 25, 48, 50, 52, 96, 97, 105, 126, 150, 155, 161, 162, 169, 187, 212, 221, 243
Ethiopians, 234
Europe, 17, 18, 26, 30, 32, 78, 80, 98, 104, 105, 107, 114, 120, 141, 145, 146, 147, 163, 164, 177, 178, 179, 210, 215, 216, 217, 223, 229, 231, 232, 236, 238

Europeans, 13, 15, 25, 28, 30, 31, 32, 54, 81, 82, 111, 120, 142, 156, 158, 160, 161, 181, 205, 219, 224
Eurykleia, 230
Eve, 157
Evolutionists, 42 *seq.*
Exchange, means of, 188–192, 195, 227 *seq.*
Exogamy, 33
Expeditions, trading, 216 *seq.*, 224
Experiment, 143, 144, 166
Expression point, 89–90

Fair, 215, 222
Famine, 74, 75, 99, 100
Fans, 193
Faroe Islands, 133
Fashions, 154
Fayum, 119
Feasts, 19, 183
Felkin, 69
Fellachs, 72
Fertilizers, 118
Fiji, 70, 177, 253
Finns, 16
Fire, 14, 38, 48, 105 *seq.*, 117, 118, 125, 143, 149, 155, 159, 167, 175, 176
Firth, 253
Fishing, 84, 99, 109, 201
Fisk, 229
Flax, 163, 164
Flint, 90, 115, 140 *seq.*, 144, 148, 149, 210, 211
Floats, 173
Florida, 179
Fly agaric, 104
Food, 12, 19, 69, 70, 71, 75, 96 *seq.*, 125, 126, 132, 161, 167, 182, 190, 194, 200, 201, 208, 213, 229, 240, 244, 251, 263
  storage of, 75
Fork, 161
Fowl, 52, 126, 132
France, Anatole, 27
Frankfort, 89
Fraternities, 91, 195
Frazer, 113
French, 105
Frisians, 135
Frontier trade, 220
Fuegians, 70, 132, 155
Funk Islands, 179
Furnace, 145, 147
Furniture, 161

Galton, 127
Gauls, 146, 216
Generosity, 194
Germans, 101
Germany, 16, 107, 136, 229
Gezer, 72
Gift, 194, 213 *seq.*, 250, 251
Ginsberg, 78, 200
Goat, 127, 133, 230
Gola, 220
Gold, 85, 142, 144, 148, 149, 150, 157, 233, 235, 236, 237, 238
Gold Coast, 224
Goldenweiser, 91
Gonerille, 164
Gordon, 28
Gourd, 87
Grain, 104, 110, 111, 113, 119, 230
Great Britain, 180
Great Lakes, 112, 119, 142
Greece, 18, 21, 32, 231, 233, 236, 238
Greeks, 18, 79, 101, 107, 162, 188 224, 230
Greenland, 18, 212
Grinding of grain, 119, 120
Guano, 118
Guarani language, 225
Guatemala, 14, 218
Guaycurus, 62
Guild, 91, 183, 195
Guinea, 238
Gwari, 165

Hadendoa, 112
Hahn, Eduard, 114, 128 *seq.*
Hair, 153
Hamitic peoples, 193
Hammer, 147, 148
Hammock, 161
Hammurabi, 237
Harrison, 86, 89, 174
Hartwick, 104
Hashish, 103
Hawaii, 66, 74, 174, 180
Head-hunting, 77, 80, 81, 199
Hearth, 107, 159, 162
Hebrews, 147, 154
Hemlock, 102

Hemp, 163
Herdsmen, 75, 86, 89, 126, 131, 135 *seq.*, 186, 201, 228, 229, 253, 255
Herero, 126, 133, 150, 152, 224
Hermunduri, 216
Herodotus, 112, 163, 175, 219
Hessia, 210
Hittites, 229
Hoards, 217
Hobhouse, 78, 200
Hoe, 114 *seq.*, 139
Hoe cultivators, 77, 126, 190, 203
Homer, 146
Honey, 102, 103, 104, 229
Hope, 169
Hopi, 92, 117, 120, 160
Horse, 49, 52, 88, 98, 125, 134, 138, 154, 170, 172
Hospitality, 103, 215
Hottentots, 108, 190
House, 19, 20, 139, 159, 160, 161, 187, 194, 244
Hudson's Bay Company, 231, 232
Hunters and hunting, 11, 22, 35, 38, 84, 92, 96 *seq.*, 111, 122, 125, 126, 134, 168, 182, 184, 190, 191, 200, 202, 240 *seq.*
Huntington, 13 *seq.*

Ibo, 254
Iceland, 229
Implements, 19, 139 *seq.*, 191, 233 *seq.*
Incas, 20, 173, 224, 261
India, 14, 17, 107, 163, 188, 190, 229, 230, 233, 236, 239
Indian Ocean, 210
Indians, American—
  agriculture, 118, 119
  basketry, 164, 187
  clothes, 156, 158
  cocaine, 103
  collecting rice, 112
  commercial aptitude, 224
  crafts, 151
  culture and climate, 20–1
  currency, 232
  furniture, 161
  intoxicants, 105
  inventions, 46, 84, 90, 99, 111
  magic, 38, 120
  mentality, 13
Indians, American—*continued*
  moon worship, 129
  navigation, 173, 179
  pottery, 167
  property, 241, 242
  sacrifice, 79
  slaves, 206
  specialization, 191
  teeth, 106
  trade, 140, 214, 217
  transport, 168, 169
Indo-China, 160
Indus, 110, 211, 212
Infanticide, 60 *seq.*, 75
Insanitary conditions, 72 *seq.*
Intelligence tests, 29 *seq.*
Intoxicants, 103 *seq.*
Invention, 20, 43, 44, 48, 49, 83, 84, 85 *seq.*, 94, 108, 111, 141, 167
Ireland, 17, 106, 222
Irish, 197
Iron, 142, 144, 145 *seq.*, 150, 151, 212, 213, 233
Iron Age, 129
Irrigation, 118, 122, 130
Israel, 147
Israelites, 104, 147
Italy, 18, 133, 231, 233
Ivory, 218, 250
Izocan, 222

Jaa, 105
Jakun, 112
Jamaica, 30
Jap, 232
Japan, 262
Japanese, 25
Java, 14
Jews, 228, 238
Jivaros, 66
Johannesburg, 15
Jonathan, 147
Jukun, 220
Justice, Administration of, 245, 259
Jutland, 210

Kafirs, 205
Kaiak, 177
Kaitish, 113
Kamchadales, 63
Kappers, 27
Katab, 165

Katanga, 143, 238
Kawélé, 226
Ké Islanders, 179
Kefir, 104
Kenya, 69, 135
King, the dying, 263 *seq.*
Kingship, the sacred, 261 *seq.*
Kirghiz, 154
Kish, 171
Knife, 119, 139, 161
Knossos, 234
Koch-Grünberg, 65
Köhler, 152
Koryak, 79
Kpelle, 214, 220, 259
Kula trade, 215 *seq.*
Kumiss, 104

La Tene, 146
Lactation, long period of, 59, 64 *seq.*, 69
Lake dwellings, 18, 129, 210, 234
Lamb, Charles, 85
Lamp, 149
Language, 37
  commercial, 225
Lapps, 50
Laum, 228
Lead, 144, 233
Leibniz, 27
Leisure, 36, 84, 95, 108, 207, 255
Light, 149, 160, 162
Limpopo, 80
Lippert, 159
Livingstone, 116
Llama, 134
Loango, 218, 262
Lodi, 165
Loom, 90, 163
Lugard, 207
Luther, 63
Lycurgus, 233
Lydians, 239

Mackenzie, 212
Madagascar, 63, 65
Magic, 37 *seq.*, 68, 91, 92 *seq.*, 101, 113, 120, 159, 189, 192, 246, 257
Mahomet, 136
Maine, 259
Maize, 49, 52, 110, 119, 229
Malachite, 143
Malaria, 12
Malay language, 225
Malay Peninsula, 19, 112, 233, 241
Malays, 170
Malinowski, 38, 39
Manioc, 49, 52, 102
Manipur, 66
Manure, 85, 96, 121, 248, 249
Maoris, 44, 114, 150, 153, 183, 189, 197, 208, 244, 250, 251, 253
Maranon, 173
Marco Polo, 229
Maria Theresa Dollar, 239
Market, 195, 220 *seq.*, 226
Marquesas, 256, 257
Marriage—
  and division of labour, 189 *seq.*
  and dress, 158
  and offspring, 55, 56
  consanguineous, 33, 34
Marshall Islands, 93
Maryland, 229
Masai, 135, 193
Maschukulumbe, 153
Mashonaland, 212
Mason, 216
Mat, 150, 161, 163, 177, 231
Mauritius, 74
Mayas, 94, 151
Mbayás, 205
McDougall, 41, 243
Mead, 104
Meal, 119, 120
Mediterranean, 17, 18, 146, 233
Melanesia, 21, 38, 45, 69, 70, 81, 121, 154, 169, 190, 199, 212, 222, 227
Melanesians, 81, 150, 155, 178, 180, 190, 203, 217
Menghin, 132
Menstruation, 65 *seq.*
Mentality, primitive, 36 *seq.*, 194
Merchant, 217, 218, 223 *seq.*, 238, 239, 257
Mesopotamia, 17, 144, 163, 175, 212, 239
Metals, 22, 115, 140, 142 *seq.*, 211, 218, 227, 232 *seq.*
Mexicans, 104, 105, 166
Mexico, 21, 54, 68, 78, 110, 111, 132, 178, 218, 222, 223, 229, 238
Mexico, Gulf of, 179

Middle Ages, 162, 194, 217, 229, 231
Migration, 13, 49, 50, 75, 111, 141, 210
Milk, 104, 106, 127, 133, 134
Millet, 110
Mining, 107, 140, 148 *seq.*, 189, 210, 216
Minstrel, 194
Mishmis, 232
Missouri, 215
Mitterberg, 149
Mittu, 153
Money, 68, 133, 139, 146, 224, 226 *seq.*
Mongols, 229
Monogyny, 59
Moon—
  and agriculture, 120
  and birth control, 65 *seq.*
  and domestication of animals, 128 *seq.*
  and intoxicants, 105
  and rest days, 66 *seq.*
Mortar, 86
Moslem, 18
Motu, 217
Mounds, 113, 118
Munchi, 220
Mutations, 22 *seq.*, 86, 89, 127, 141
Mycenae, 231

Nails, 150, 151, 176
Nansen, 177, 212
Narcotics, 103 *seq.*
Navigation, 44, 51
Neanderthal Man, 106
Negroes, 16, 22, 25, 27, 30, 31, 62, 120, 151, 154, 198, 207, 224
Neolithic Age, 210
New Britain, 224, 254, 258
New England, 118
New Guinea, 73, 80, 132, 139, 160, 161, 179, 180, 217
New Hebrides, 232, 250, 254
New Zealand, 43, 180, 199
News, 52, 172
Ngoio, 263
Nickel, 233
Nieboer, 196, 198
Nigeria, 165, 196, 205, 206, 207, 224
Nile, 110, 112, 163
Nootkas, 64, 99
Nordenskiöld, 20, 84, 102
Nordics, 13, 22, 234
Noricum, 146
Normandy, 234
Norway, 18

Oar, 88, 174, 177
Oats, 110
Oceania, 114, 132, 156, 192
Officials, 124
Ojibwas, 112
Old age, 71
Old Testament, 147, 236
Olympic games, 120
Opium, 103
Orange River, 80
Organization, social, 50, 99, 100, 122 123, 182, 260
Ornaments, 19, 139, 142, 146, 151, 152 *seq.*, 211, 215, 217, 232, 233 *seq.*, 243
Oronsay, 173
Outrigger, 46, 176 *seq.*
Ox, 130, 230, 231

Pacific, 44, 46, 62, 74, 82, 139, 151, 161, 176, 178, 180, 201
Padaung women, 152
Paddle, 174, 177
Paiute, 97, 102, 112, 155
Paleolithic Period, 98, 110
Palestine, 236
Palmwine, 104
Pangwe, 192, 214, 234, 259
Panicum, 119
Paraguay, 118, 225
Papua, 161
Papuans, 38, 217
Passarge, 220
Pearson, 27
Peking Man, 106
Peloponnese, 233
Penelope, 262
Penny, 237
Pepper, 103, 229
Persia, 231
Persian Gulf, 176
Persians, 107
Peru, 34, 76, 102, 118, 119, 155, 172, 174, 178, 262
Peruvians, 118, 164, 166
Pestle, 86

Pets, 126, 127
Pharaoh, 132, 262
Philippines, 229
Philistines, 147
Phoenicians, 105, 219, 224
Pig, 73, 112, 127, 132
Pile dwellings, 72, 87, 160
Pipe, 154
Pirate, 219
Pituri bush, 103
Plains Indians, 97, 98, 125, 126, 172, 246
Plaiting, 187, 188
Plate, 161
Plaustrum, 171
Pliocene Period, 140
Plough, 47, 85, 86, 89, 114 *seq.*, 121, 122, 123, 130, 131, 134, 136, 186, 190, 249
Plunder, 216, 219
Plutarch, 236
Point Barrow, 212
Poison, 99, 102
Polybius, 146
Polygyny, 59, 203, 250
Polynesia, 45, 48, 73, 121, 177, 223
Polynesians, 81, 94, 151, 152, 161, 173, 178, 180, 181, 216, 217
Ponape, 93
Population, 52, 54 *seq.*, 111, 123
Poro, 259
Portuguese, 232
Potlach, 82, 252, 254
Pottery, 44, 86, 88, 106, 107, 123, 143, 150, 161, 162, 164 *seq.*, 180, 186, 188
Priests, 255
Privacy, 42, 159
Production goods, 139 *seq.*
Property, 103, 197, 199, 206, 210
  collective, 213
  in land, 124, 241 *seq.*, 247 *seq.*, 255
  movable, 243 *seq.*, 249 *seq.*
  slaves as, 196, 204
Prjewalski, 137
Pueblos, 114, 119, 120, 187
Pulque, 104
Pyramids, 94
Pyrenees, 106

Race, 22 *seq.*, 35
Race mixture, 32 *seq.*
Raft, 174, 177
Raw materials, 19
Reaping, 119
Rebekah, 234
Reciprocity, 194, 213, 240
Reindeer, 48, 100, 126, 128, 134
Remuneration, 194, 201
Research, 87
Resources, open and closed, 198 *seq.*
Réunion, 74
Rhodesia, 141, 153
Rhythm and work, 177, 183
Rice, 70, 110, 121, 229
Ridgeway, 231, 235, 236, 237
Ridicule, 41, 214
Rig-Veda, 105
Ring, 232–4
Rio Grande, 78
Rio Tikie, 65
Risk, 218, 224
Rivers, 227
Roads, 172, 259
Romans, 18, 146, 186
Rome, 18, 33, 103, 107, 137, 244
Roof, 160
Rossel Island, 227
Ruble, 238
Ruderals, 113
Russia, 163
Rye, 110

Sabbath, 67, 68
Sacrifice, human, 76 *seq.*, 197, 209, 256, 264
Sago, 70, 97, 186, 218
Sahara, 133
Sail, 174, 178, 180
Sakai, 19
Salado, 119
Salmon, 97, 99
Salt, 102, 103, 148, 210, 216, 227, 229
Samoa, 74, 194, 231
Samoans, 159, 176, 224
Saul, 147, 216
Savannah, 121, 122, 135
Saxons, 230
Scandinavia, 193, 210
Scandinavians, 80, 219
Scar, 153
Scotchmen, 136
Scrapers, 187
Scythe, 119

Scythians, 262
Seal, 212, 239
Security, 209, 210, 217, 256
Seed, 85, 237
Selection, 12 *seq.*, 23, 32, 63, 70, 73, 86, 87, 127
Sema Nagas, 119
Semang, 19, 97, 102, 106, 139, 241
Semas, 192
Semites, 129, 132, 136, 234
Sengirese, 198
Seres, 220
Serfs, 196, 200, 201, 255, 260
Sewee, 179
Sewing, 188
Shans, 190
Sheep, 127, 133, 230, 231, 236
Shekel, 234, 236
Shells, 87, 118, 139, 150, 151, 156, 161, 210, 227, 232
Shelter, 19, 159, 172
Shilluks, 129, 263
Ship, 175
Shoes, 169
Siam, 34
Siberia, 21, 65, 97, 100
Siberians, 160
Sicilians, 16
Sickle, 119
Sieg, 146
Sierra Nevada, 112
Silent trade, 219 *seq.*
Silk, 164
Silver, 233, 235
Similkameen tribes, 169
Sinube, 105
Skins, 155, 156, 177, 231, 239
Skulls, 161, 162, 232
Slavery, 48, 77, 159, 168, 190, 191, 196 *seq.*, 255
Sledge, 50, 132, 170, 172
Smelting of metals, 93, 94, 107, 142, 143 *seq.*, 189
Smith, Adam, 223
Smiths, 146, 147, 193
Societies, secret, 195, 256, 258
Solidus, 230
Solomon Islands, 227
Solon, 236
Soma, 105
Somaliland, 229
Songs, 19, 52, 243
South Africa, 99
South Sea Islands, 62, 76, 77, 186, 232
Spade, 114
Spain, 18
Spaniards, 52, 160
Sparta, 233
Spartans, 234
Spear, 147, 234
Spearman, 83
Specialization, 83, 124, 184, 186, 191 *seq.*, 210, 212, 213, 224, 226
Spices, 102, 103
Spinning, 162, 188
Spoon, 161
Standard of value, 229
State—
  administration of, 261
  autocratic, 260 *seq.*
  feudal, 260
Steggerda, 30
Stick, digging, 114, 131
Stone implements, 94, 140 *seq.*, 144, 151, 152, 161, 191, 213
Storage of food, 75, 101, 121
Stratification, 95, 183, 190, 207, 248, 255
Sudan, 17, 112, 133, 220, 225, 229, 259
Suebi, 146, 216
Sumer, 211
Sumerians, 144, 164, 166
Sun and human sacrifice, 77
Susa, 163, 165
Swahili, 218
Sweden, 115, 116
Switzerland, 75, 114, 163, 210
Sword, 131, 146, 147, 233
Syria, 236

Table, 161
Tabu, 40, 60, 65, 66, 71, 93, 101, 192, 244, 257
Tacitus, 216
Tanganyika, 226
Tapu, 189, 208
Taro, 213
Tartars, 229
Tasmanians, 50, 54
Tatooing, 153, 159
Tax system, 190, 191, 229, 250, 261
Tchaka, 80
Tea, 229

Technique, 35, 36, 37, 39, 40, 50, 83 *seq.*, 100, 111, 121, 140, 141, 142, 145, 146, 149, 151, 165, 182, 192, 195, 202, 211, 224
Temperature, 14 *seq.*
Teosinte, 110
Terrace, cultivation, 45, 119
Texcoco, 222
Theft, 245
Thomas, 184
Threshing, 119
Thuringia, 210
Thurnwald, 203
Thutmosis, 234
Tibet, 133
Tierra Del Fuego, 14, 65
Tigris, 175
Tin, 85, 144, 148, 238
Tlinkit, 208, 232
Tobacco, 52, 70, 103, 186, 213, 227, 229
Tolowa, 241
Tomato, 102
Tonquin, 263
Tools, 107, 139 *seq.*, 187, 194, 211, 213
Torres Islands, 21, 192
Trade, 14, 21, 50, 51, 52, 140, 183, 189, 191, 201, 203, 204, 206, 210 *seq.*, 237
Traders, 136, 189
Tradition, 40, 46, 47
Traits, 11
Transferability of property, 227
Transport, 19, 48, 52, 88, 134, 168 *seq.*, 212
Travois, 132, 170, 172
Tribute, 201, 216, 234, 236, 251, 260
Trobriander, 92, 214, 215, 227, 250, 251, 253
Tropics, 13, 14, 16, 20, 21, 111, 117, 121, 173
Troy, 230
Tuareg, 58, 136
Tubers, 104, 110, 111, 117
Turco-Tartars, 134
Twins, 63 *seq.*
Tylor, 41, 116, 152
Tyrol, 149
Tyrolese, 136

Uganda, 69
Ulysses, 262
United States, 16, 17, 20, 30
Ur, 171

Valhalla, 254
Variations, 49, 50, 86 *seq.*, 112, 141
Vaud, Canton of, 186
Veddahs, 26, 241
Venezuela, 160, 179
Venice, 160
Victoria, State of, 184
Vikings, 107, 179
Vinogradoff, 258
Vint, Dr., 28

Wabondei, 205
Wagon, 130
Wahuma, 127
Walls, 160
War, 48, 75, 76, 78, 79 *seq.*, 190, 191, 193, 196, 199, 205, 207, 216, 241
Washo, 241
Wash-strakes, 176, 179
Wealth—
  advantages, 254
  disadvantages, 254, 255
Weapons, 139, 142, 148, 189, 193, 211, 229, 243
Weaving, 123, 163, 164, 188, 192
Week, market, 221
Weighing, 234
Weight standards, 235 *seq.*
West Indies, 74, 132, 178, 180
Westermarck, 57
Wheat, 110, 111
Wheel—
  potter's, 166, 186
  vehicular, 170 *seq.*
Wheeler, 78, 200
Windows, 14, 160, 161
Wine, 104, 105, 230
Wire, 238
Women—
  and slavery, 203, 205
  and social differentiation, 249–250
Wood, 139, 140, 150, 151
Wood Crees, 242
Wool, 127, 132, 133, 163
Work—
  ability to, 14–15
  collective, 182 *seq.*
  desire to, 14–15
Wrangel, 100

Wurunjerri, 184

Xerxes, 144, 163
Yaghans, 14, 19
Yahweh, 128, 216
Yakut, 21
Yams, 102, 112, 169
Yukaghir, 100

Zulu, 92
Zululand, 149
Zuni, 186